

Burnham Boilers

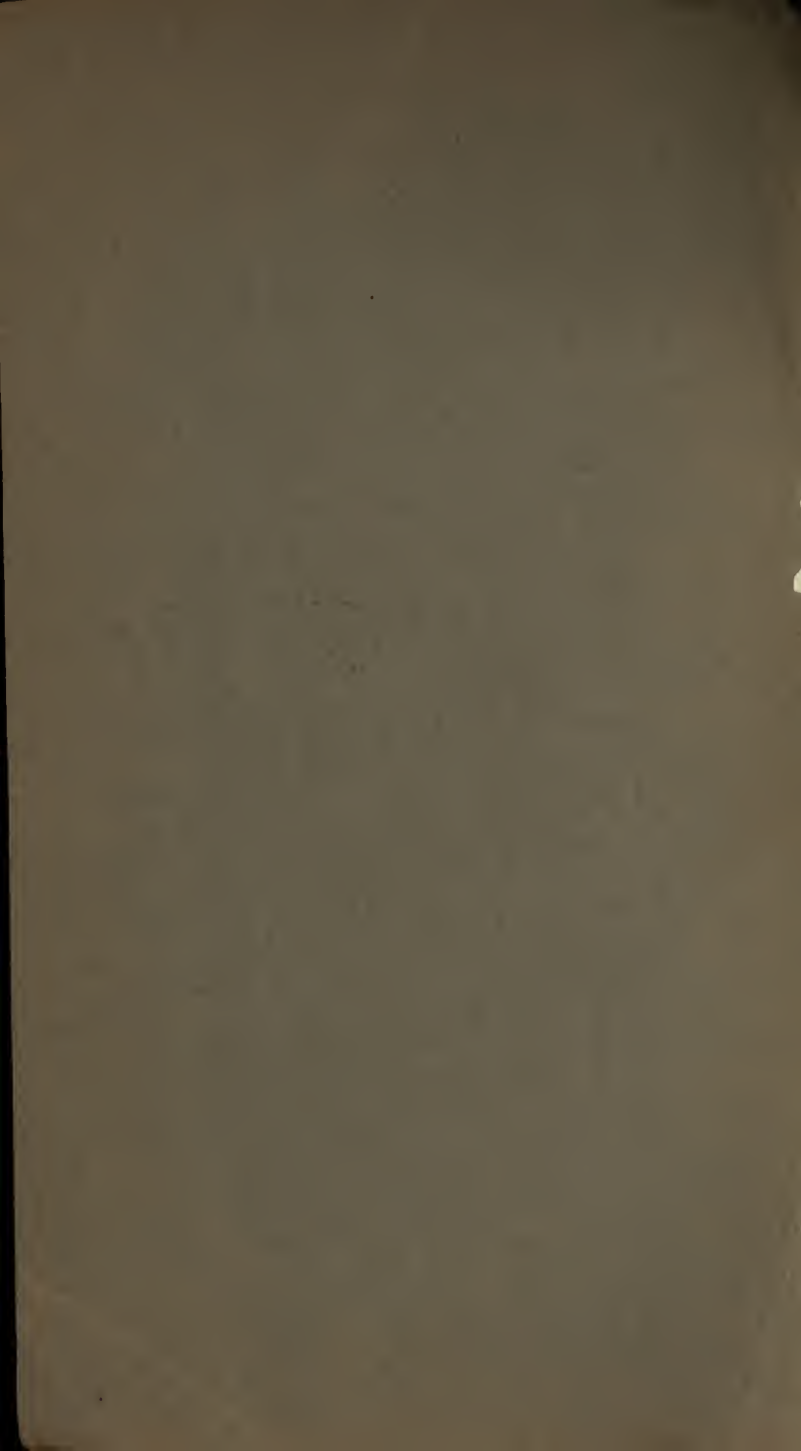


Catalog No. 64

WILLIAM H. GURNEY CO.

190-19th Avenue

Paterson, N. J.





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Snapping cold outside—below zero, yet beneath that $\frac{1}{8}$ -inch sheet of greenhouse glass, tender orchids thrive in a non-fluctuating almost torrid heat. For over fifty years, more of our boilers have heated greenhouses than any other cast iron boiler made.

Hardly a wonder, then, that they are now chosen for home heating of the cosy comfort kind!



The Burnham



No. 1. Just an old timey, flat bottomed, iron tea kettle.



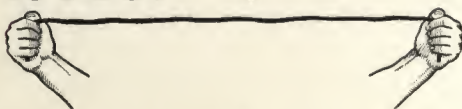
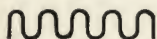
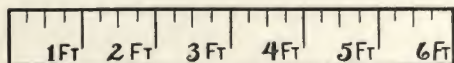
No. 2. By bringing the hollow sides down in the fire this way, the water boiled much more quickly.

A Plain Explanation Why Our Boilers are Made The Way They Are Made

TEA kettles were the first household boilers. Our boilers are tea kettles grown up. Let's explain.

Cut No. 1, shows a kettle that took twelve minutes to boil. Kettle No. 2, has the sides extended down into the fire so that it can heat the water more quickly. The same fire boiled this kettle in eight minutes, saving four minutes over No. 1, and no more coal burned.

Kettle No. 3, was made with fluted bottom, which

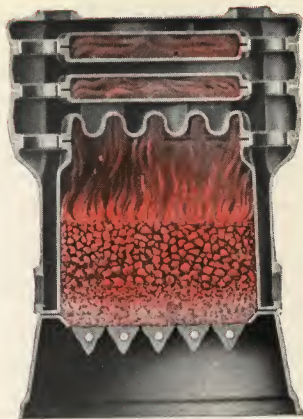


No. 5. If the crimped up bottom of Kettle No. 3, on the opposite page, were pulled out straight, it would be a big, broad bottom about 3 times as wide. The part over the fire in the Square Boiler has those same deep flutes, or corrugations, giving it 3 times the fire surface in a third of the width. That's one of the big reasons for its economy.

The Burnham



No. 3. And this kettle with the bottom full of crimps or corrugations, still further shortened the boiling time. (See cut No. 5, opposite page).



No. 4. This view of our Round Water Boiler shows how it is made exactly like Kettle No. 3.

just tripled the amount of water surface space, which the same fire could directly heat (see cut No. 4 on this page). This kettle boiled in four minutes; or one-third the time of the first kettle and yet no more coal was burned. So much for the firepot part of the kettle, or the "direct fire surface" as it is called in boilers.

Next, we made a real boiler along the lines of kettle No. 3, but constructed it so the smoke and hot gases from the fire would have to go back and forth between water lined passages, before they reached the chimney. This resulted in using every last vestige of heat practical. Then we had a full-fledged, grown-up boiler—the tea kettle had reached its "full growth." Of course, we have been continually making minor improvements, which have further added to our boilers' economy, and also made them surprisingly easy to run. They are made in either round or square shape. Both kinds are of sectional construction, making it easy to install them and equally easy to repair.

Water Square Sectional

THE basic principle of our Sectional Boilers is that a long fire travel (rightly proportioned) makes a short coal bill. They have a fire travel three times back and forth the length of the boiler. This, combined with the deep cross channels, directly over the hottest part of the fire, which lead the fire to the individual side flue openings, makes each section equally efficient, simply because each section gets an equal distribution of the fire and heated gases.

When you ask the question: "Are they economical?" Our most convincing reply is, that before one of these boilers was sold for residence or general heating, they first had to meet the most exacting demands of commercial greenhouse requirements, where coal costs and heat results are watched like a cat watches a mouse. And more of our boilers are used for greenhouse heating than any other cast iron boiler.



No. 5a. Showing exterior of Hot Water Boiler. Note big, broad business-like lines, large size fire door; separate clean out doors to each flue. Sections can be added to increase capacity, either to front or rear, whichever is more convenient. With this sectional construction comes ease in handling and simplicity of set up.

The Burnham

Steam Square Sectional

TWO problems which every boiler manufacturer has been tussling with for years, we long since satisfactorily solved in our Steam Boiler: One—to make it low enough so it can be used in shallow cellars; the other, to not sacrifice size of steam dome, so that it will still be of ample size to prevent priming.

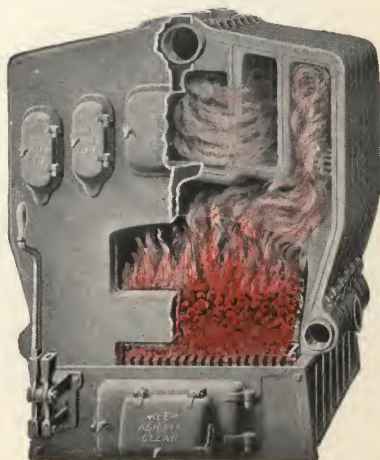
Just because we were willing to spend the money to change our patterns time and time again, we now have a broad, low boiler, with a good, husky-sized steam dome, big enough to satisfactorily meet such conditions.

In every other particular it is constructed like the water boiler, and has the same economy and convenience in operating, such as damper operating on front of the boiler; separate clean-out door to each flue; ample-sized clinker door opening; plenty big fire box door, so scoop won't bang on sides and spill the coal; grates shake half at a time; deep ash pit.

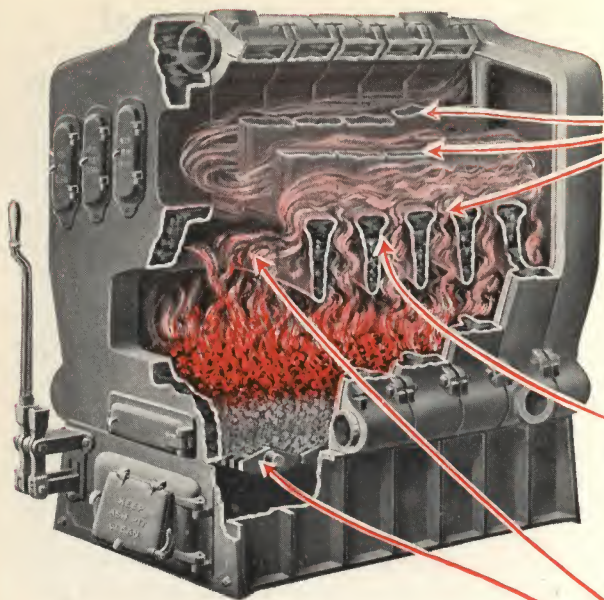
No. 6. Cutaway showing three times back and forth fire travel on each side of the boiler.

The fire and gases coming up between each section results in each section being equally efficient.

Grate Bars shake half at a time, not only making the shaking operation easier, but permitting the use of one-half the grate when only a small fire is required. Another economy point.



The Burnham



Some Common Sense

IT'S easy for boiler manufacturers to fall into the lingo of the trade, and talk "direct and indirect surface; long and short fire travel; flue openings" and all that sort of thing, and take it for granted that it's plain to every one. As a matter of fact, to the average person it's generally Greek. This page we hope will be a translation of the more important economy points and advantages.

The Burnham

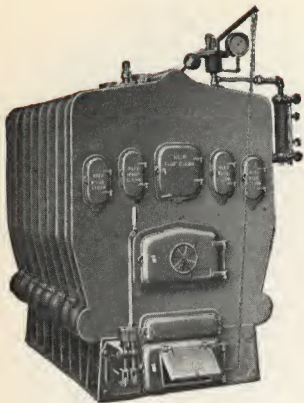
Three times back
and forth it travels

Side flue openings
between each section

Cross fire channels
between each section

Ridge - shaped
double trussed grate

The Burnham



It's the Long
Fire Travel
That Makes
the Short
Coal Bill

Steam Boiler

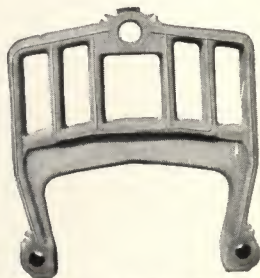
THE Steam Boiler has the same broad shouldered, sturdy look as the Water Boiler, only that it is taller.

In that very tallness, lies one of its best points. Because of it, ample space is allowed for a steam dome, where the steam can expand before going to the radiators.

Stingy, little, low steam domes cause all kinds of trouble with the steam being wet, and so not containing the heat it should; or the water boiling over into the pipes, playing hob in general.



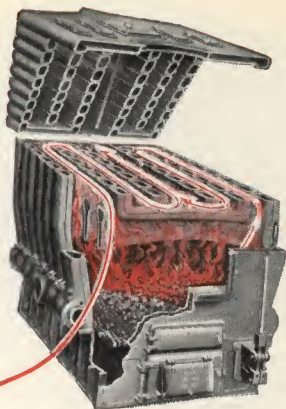
No. 7. All that space above the water line in this section of a steam boiler, is the steam dome.



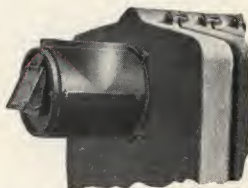
No. 8. Comparing the steam section with this one from the water boiler, shows you the steam dome space.

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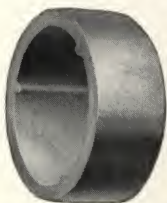
Note that fire travel is 3 times back and forth, on both sides of boiler



No. 9. The smoke box is equipped with an interchangeable cold air damper plate, and the hood itself shifts around to any position desirable for connecting the smoke pipe.



No. 10. Here you see the hood is swung around, and the damper plate put on the side so the pipe can be connected at the back.

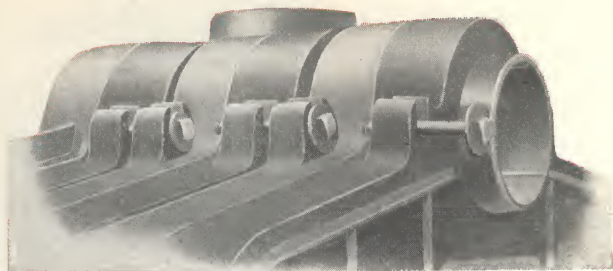


No. 11. These cast-iron bevel-milled nipples are used to connect the sections. One at the top and one at each side just above the base.

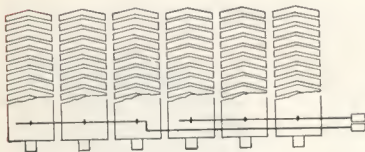


No. 12. The damper is operated from the front of the boiler. The damper plate is secured directly to the back section and is not located in the smoke box hood.

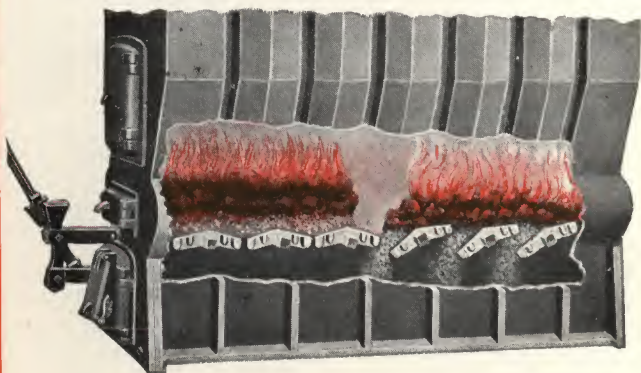
The Burnham



No. 13. The bothersome and expensive operations involved in erecting a boiler equipped with long tie bolts is entirely overcome by our method of drawing and holding sections together by short tie bolts. Not only do they make erection easy, but greatly lessen the expense of removing any section, or adding sections to increase the capacity.

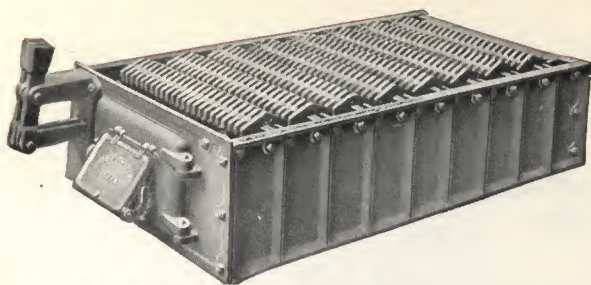


No. 14. As we mentioned before, the grate operates in halves—this sketch shows how this half operation is arranged.



No. 15. The ashes dump to the front, an advantage the man who takes them out, keenly appreciates. Great clinker smashers are these grates—another point in their favor.

The Burnham



No. 16. The sides and ends of the base are in separate pieces and bolted together. You can readily see the advantages of such an arrangement, both in handling and setting up the base. Should you want to add more sections to your boiler, section sides can easily be added to the base.



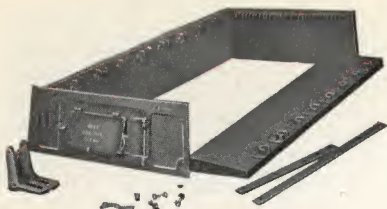
No. 17. The ridge shape of each grate bar you can easily see, when shaken will stir up and shake down the ashes with less effort than a flat grate. Warping, which interferes with ease of operation, is prevented by a heavy trussing cast under each side of each grate.



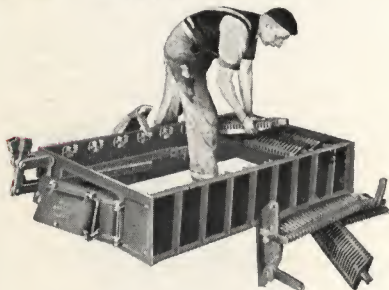
No. 18. Another economy point—with the grate operating in halves, the rear half can be banked with ashes and the front half fired for mild weather requirements, reducing both coal consumption and labor.

The Burnham

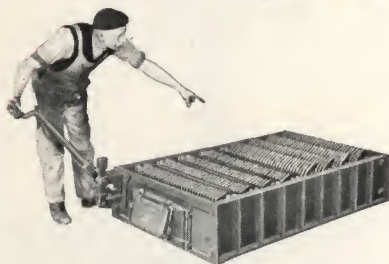
Easy to Erect



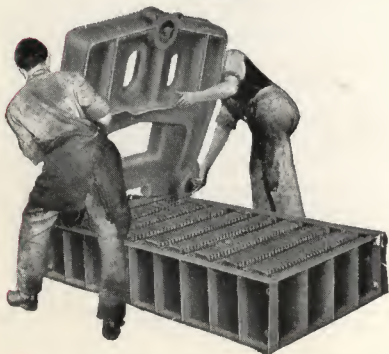
No. 1. First comes the base. It is in four main pieces and can be quickly bolted together.



No. 2. Then the grate bars are next dropped into their sockets.



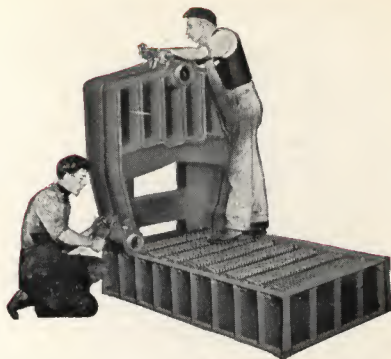
No. 3. After fastening up the grate shaker connection, it is tested to see if it shakes right in every way. This one does. The back half is being operated.



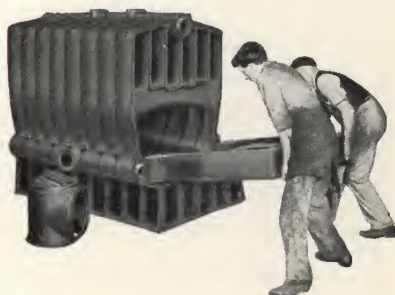
No. 4. Then everything is ready for the front section to be lifted on and slid into place.

The Burnham

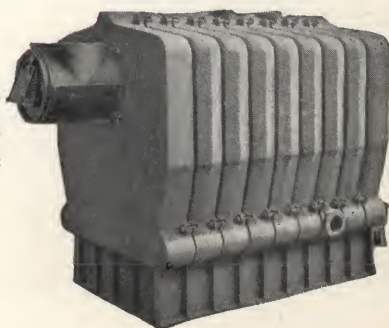
No. 5. Put in the nipple connections, add another section and tighten up the four short tie bolts.



No. 6. Section after section is added and finally the rear one is ready to swing in place and the smoke box bolted in position, ready to connect to the chimney.



No. 7. And there you have the boiler set up. Simple enough, wasn't it?



RATINGS—SQUARE SECTIONAL STEAM BOILERS

Series	No.	Sq. Feet† Direct Radiation	Number of Sections	Average Size Firepot	Grate Area in Sq. Ft.	Size of Grate	Size Supply Tappings	Size Return Tappings	Total Length
18"	S-18-4	750	4	24x24	3.00	18x24	1-3½	1-3½	50
	S-18-5	950	5	24x31½	3.94	18x31½	2-3½	2-3½	57½
	S-18-6	1150	6	24x39	4.88	18x39	2-3½	2-3½	65
	S-18-7	1350	7	24x46½	5.81	18x46½	2-3½	2-3½	72½
24"	S-24-5	1350	5	30x31	5.17	24x31	2-4	2-4	60
	S-24-6	1700	6	30x38½	6.42	24x38½	2-4	2-4	67½
	S-24-7	2050	7	30x46	7.67	24x46	2-4	2-4	75
	S-24-8	2400	8	30x53½	8.92	24x53½	2-4	2-4	82½
30"	S-30-5	1750	5	36x31	6.46	30x31	2-4	2-4	63½
	S-30-6	2250	6	36x38½	8.02	30x38½	2-4	2-4	71
	S-30-7	2750	7	36x46	9.58	30x46	2-4	2-4	78½
	S-30-8	3250	8	36x53½	11.15	30x53½	3-4	3-4	86
	S-30-9	3750	9	36x61	12.71	30x61	3-4	3-4	93½
36"	S-36-6	2850	6	41x39½	9.88	36x39½	2-4	2-4	74½
	S-36-7	3500	7	41x47	11.75	36x47	3-4	3-4	81½
	S-36-8	4150	8	41x54½	13.63	36x54½	3-4	3-4	89½
	S-36-9	4700	9	41x62	15.50	36x62	3-4	3-4	96½
	S-36-10	5350	10	41x69½	17.38	36x69½	4-4	4-4	104½
	S-36-11	6000	11	41x77	19.25	36x77	4-4	4-4	111½

†Ratings subject to notice on page 47.

All boilers (except S-18-4) have double shaker bar, operating grate in two sections.

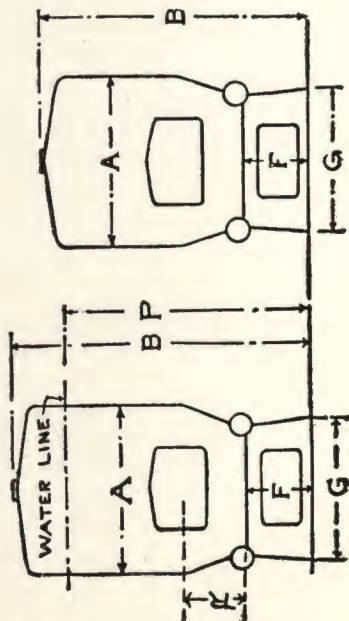
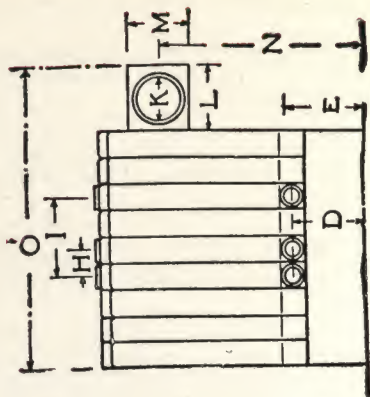
RATINGS—SQUARE SECTIONAL HOT WATER BOILERS

Series	No.	Sq. Feet† Direct Radiation	Number of Sections	Average Size Firepot	Grate Area in Sq. Ft.	Size of Grate	Size Supply Tappings	Size Return Tappings	Total Length
18"	W-18-4	1250	4	24x24	3.00	18x24	2-3½	2-3½	50
	W-18-5	1575	5	24x31½	3.94	18x31½	2-3½	2-3½	57½
	W-18-6	1900	6	24x39	4.88	18x39	2-3½	2-3½	65
	W-18-7	2225	7	24x46½	5.81	18x46½	3-3½	3-3½	72½
24"	W-24-5	2225	5	30x31	5.17	24x31	2-4	2-4	60
	W-24-6	2800	6	30x38½	6.42	24x38½	2-4	2-4	67½
	W-24-7	3375	7	30x46	7.67	24x46	2-4	2-4	75
	W-24-8	3950	8	30x53½	8.92	24x53½	3-4	3-4	82½
30"	W-30-5	2900	5	36x31	6.46	30x31	2-4	2-4	63½
	W-30-6	3715	6	36x38½	8.02	30x38½	2-4	2-4	71
	W-30-7	4530	7	36x46	9.58	30x46	3-4	3-4	78½
	W-30-8	5345	8	36x53½	11.15	30x53½	3-4	3-4	86
	W-30-9	6160	9	36x61	12.71	30x61	4-4	4-4	93½
36"	W-36-6	4700	6	41x39½	9.88	36x39½	3-4	3-4	74½
	W-36-7	5775	7	41x47	11.75	36x47	3-4	3-4	81½
	W-36-8	6850	8	41x54½	13.63	36x54½	4-4	4-4	89½
	W-36-9	7925	9	41x62	15.50	36x62	4-4	4-4	96½
	W-36-10	9000	10	41x69½	17.38	36x69½	5-4	5-4	104½
	W-36-11	10075	11	41x77	19.25	36x77	5-4	5-4	111½

†Ratings subject to notice on page 47.

All boilers (except W-18-4) have double shaker bar, operating grate in two sections.

MEASUREMENTS—SQUARE SECTIONAL STEAM AND HOT WATER BOILERS



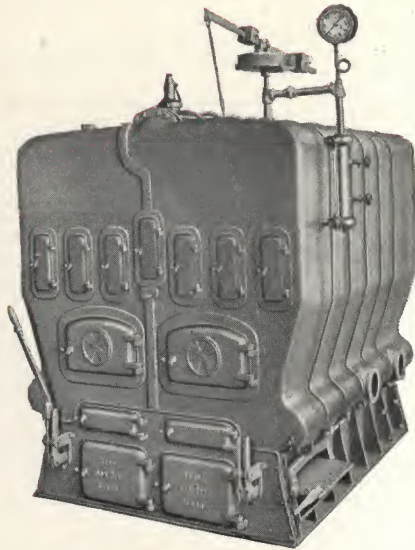
MEASUREMENTS—SQUARE SECTIONAL STEAM AND HOT WATER BOILERS

	18" SERIES		24" SERIES		30" SERIES		36" SERIES	
	Water in Inches	Steam in Inches	Water in Inches	Steam in Inches	Water in Inches	Steam in Inches	Water in Inches	Steam in Inches
A	32	32	37 $\frac{5}{8}$	37 $\frac{5}{8}$	47 $\frac{5}{8}$	47 $\frac{5}{8}$	52 $\frac{1}{2}$	52 $\frac{1}{2}$
B	51 $\frac{3}{4}$	57	58	63 $\frac{3}{4}$	64 $\frac{3}{4}$	71 $\frac{1}{4}$	69 $\frac{3}{4}$	74 $\frac{3}{4}$
D	14	14	16 $\frac{5}{16}$	16 $\frac{5}{16}$	16 $\frac{7}{8}$	16 $\frac{7}{8}$	16 $\frac{7}{8}$	16 $\frac{7}{8}$
E	..	..	..	..	..	..	..	..
F	11	11	13	13	13 $\frac{1}{8}$	13 $\frac{1}{8}$	..	..
G	27	27	30 $\frac{1}{2}$	30 $\frac{1}{2}$	36	36	13 $\frac{1}{8}$	13 $\frac{1}{8}$
H	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	42 $\frac{1}{2}$	42 $\frac{1}{2}$
I	22 $\frac{1}{2}$	22 $\frac{1}{2}$	22 $\frac{1}{2}$	22 $\frac{1}{2}$	22 $\frac{1}{2}$	22 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$
K	9	9	12	12	14	14	22 $\frac{1}{2}$	22 $\frac{1}{2}$
L	13 $\frac{1}{4}$	13 $\frac{1}{4}$	14 $\frac{1}{2}$	14 $\frac{1}{2}$	16	16	16	16
M	9	9	12 $\frac{1}{2}$	12 $\frac{1}{2}$	15 $\frac{1}{2}$	15 $\frac{1}{2}$	19	19
N	38 $\frac{1}{2}$	38 $\frac{1}{2}$	45	45	47	47	16 $\frac{1}{2}$	16 $\frac{1}{2}$
P	..	45 $\frac{1}{2}$	..	52	..	55 $\frac{1}{4}$	51 $\frac{1}{2}$	51 $\frac{1}{2}$
R	15 $\frac{1}{4}$	15 $\frac{1}{4}$	15 $\frac{1}{4}$	15 $\frac{1}{4}$	16 $\frac{5}{16}$	16 $\frac{5}{16}$	..	57
							18	18

SPECIAL NOTE

Return Tappings of Steam Boilers are now located on side of boiler same as Return on Water Boilers. Sections with Return Tappings are interchangeable and can be located on either side of the boiler, wherever more convenient.

The Burnham



It stands $80\frac{1}{4}$ in. high and is $70\frac{7}{8}$ in. broad.
Made in seven sizes, with steam ratings from
7,850 to 16,550 square feet.

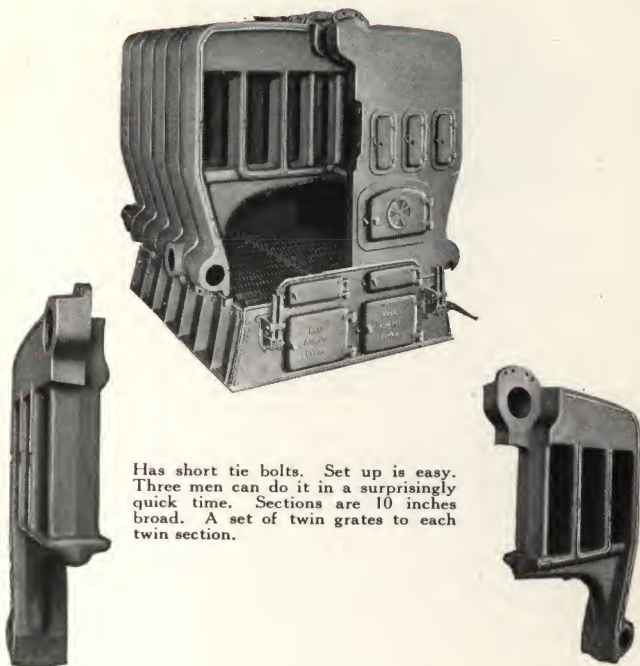
The Big Twin Sectional

IT starts where our big single Sectional Square Boiler, with its 36-inch grate leaves off.

This Big Twin Sectional has a 50-inch grate.

The sections are twins. So are the grates. Aside from which, it is made on practically the same lines as its smaller brothers, with their long fire travel and short coal bill.

The Burnham



Has short tie bolts. Set up is easy. Three men can do it in a surprisingly quick time. Sections are 10 inches broad. A set of twin grates to each twin section.

The Twins Themselves

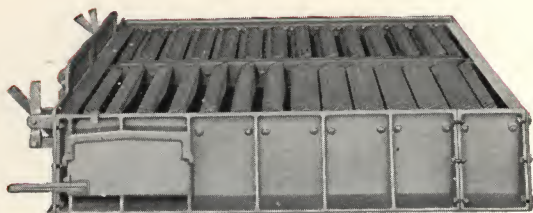
BIG as the boiler is, each twin is no heavier than the separate sections on the 30-inch Square Sectional Boiler. All except the front and back twins are interchangeable.

A right hand one can be made left by simply turning it around.

The lap-over-lap with its nipple connection, joins the twins at the top.

A pipe at the back connects each side at the bottom.

The Burnham



Instead of the grates being made long, cumbersome 50 inch bars, that are very difficult to handle and that are bound to warp, these bars are ridge shaped and are under-trussed on each side to prevent warping. They are but 24 inches long and weigh only 40 pounds.

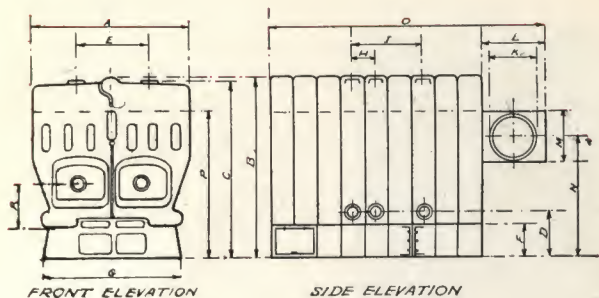
RATING FOR STEAM

No.	Rating Sq. Ft.	No. and Size of Outlet and Inlet	Average Size of Fire Pot	Grate Area Sq. Ft.
S-50-6	7850	3-5 in.	55x55.5	19.27
S-50-7	9300	3-5 in.	55x66	22.92
S-50-8	10750	4-5 in.	55x76.5	26.56
S-50-9	12200	4-5 in.	55x87	30.20
S-50-10	13650	5-5 in.	55x97.5	33.85
S-50-11	15100	5-5 in.	55x97.5	33.85
S-50-12	16550	5-5 in.	55x97.5	33.85

RATING FOR WATER

W-50-6	12600	4-5 in.	55x55.5	19.27
W-50-7	15000	4-5 in.	55x66	22.92
W-50-8	17400	5-5 in.	55x76.5	26.56
W-50-9	19800	5-5 in.	55x87	30.20
W-50-10	22200	6-5 in.	55x97.5	33.85
W-50-11	24600	6-5 in.	55x97.5	33.85
W-50-12	27000	6-5 in.	55x97.5	33.85

The Burnham



LETTERS

A	70 $\frac{7}{8}$ in.	I	31 $\frac{1}{2}$ in.
B	80 $\frac{1}{4}$ in.	K	22 in.
C	77 $\frac{1}{2}$ in.	L	28 in.
D	20 $\frac{3}{4}$ in.	M	22 $\frac{3}{4}$ in.
E	19 in.	N	53 $\frac{3}{8}$ in.
F	15 in.	P	65 $\frac{3}{4}$ in.
G	60 $\frac{3}{4}$ in.	R	17 in.
H	10 $\frac{1}{2}$ in.		

MEASUREMENTS

Steam and Water	Length "O"	Size of Grate
50-6	91 in.	50x55.5 in.
50-7	101 $\frac{1}{2}$ in.	50x66 in.
50-8	112 in.	50x76.5 in.
50-9	122 $\frac{1}{2}$ in.	50x87 in.
50-10	133 in.	50x97.5 in.
50-11	143 $\frac{1}{2}$ in.	50x97.5
50-12	154 in.	50x97.5

The Burnham



This Water Boiler has the same 3 times back and forth fire travel and other economical features as its big brother the Square Sectional Boiler.

For High
Pressure
Hot Water
Heating

Water Tube
Type

IT'S a high pressure boiler with a wonderful reputation for the economical heating of water supply tanks.

Good for 80 pounds.

Tested at $2\frac{1}{2}$ times its ratio working pressure in accordance with the A.S.M.E. Code.

It is especially adapted for hot water supply in apartment houses, office buildings, hospitals, stores, theaters, garages, and similar buildings.

A Powerful Worker

This Newest of Our Boiler Family
Here's Why—

Short tie-bolt connected.

Double shaker grates.

Big fire-box door.

Separate clean-out door, for each flue.

Generous size base.

The Burnham

Operating parts all on the front.

Every one of them, outstanding features of our boilers.

Special equipment furnished with this high pressure series.

Automatic Damper Regulator operates the drafts at back of boiler as the temperature of the water rises or lowers.

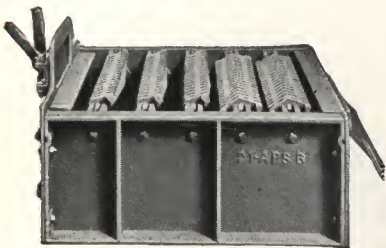
Hand regulation draft doors also furnished at front of boiler.

Hot Water Relief Valve set at 80 lbs. pressure.

Two 2-in. Brass Clean-out Plugs on lower part of front section so that sediment that accumulates can be easily cleaned out.

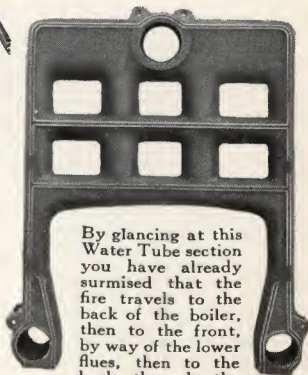


Water Tube Type
Water Boiler.



The grates are the ridge type, having a tilting and rocking motion.

Operate half at a time, making them half again as easy to shake.



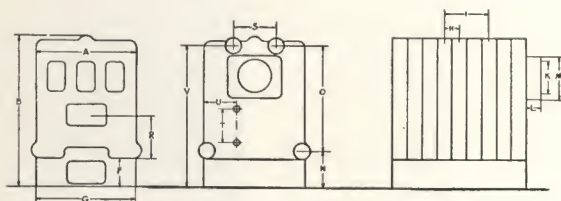
By glancing at this Water Tube section you have already surmised that the fire travels to the back of the boiler, then to the front, by way of the lower flues, then to the back through the upper flue-ways.

The Burnham

In construction, note the water ways are tubular in shape, giving them extra strength.

The castings are amply heavy and the iron is placed at proper place to do the most good.

There are no large areas of flat surfaces. Even the rear section is corrugated and that means greater surface exposed to the fire travel. Consequently greater heat usage and shorter coal bills.



Measurements and Ratings

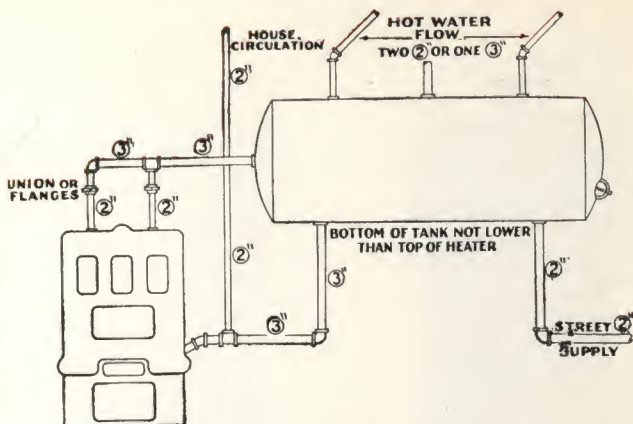
Size	Number of Sections	Grate Area Sq. Ft.	Size of Grate Inches	Water Rating Sq. Ft.	Tank Capacity Gallons	Size Storage Tank	Number of Families*	Total Length
W-21-4	4	2.47	21x17	1,000	865	42"x12'	28-31	24"
W-21-5	5	3.20	21x22	1,300	1,000	42"x14'	32-37	29"
W-21-6	6	3.93	21x27	1,600	1,130	48"x12'	38-42	34"
W-21-7	7	4.66	21x32	1,900	1,300	48"x14'	43-47	39"
W-21-8	8	5.39	21x37	2,200	1,500	48"x16'	48-52	44"
W-21-9	9	6.12	21x42	2,500	1,665	54"x14'	53-57	49"
W-21-10	10	6.85	21x47	2,800	1,757	60"x12'	58-62	54"

A	B	F	G	H	I	K	O	L	M	R	S	T	U	V	N
29½"	52¾"	13"	29½"	5"	15"	10"	32¾"	4"	15¾"	15"	12"	10¼"	9¾"	48"	15¾"

*Average 3 to 4 room apartments.
Tappings: Two 3 in. Supplies.
Two 3 in. Returns on Rear Section.
Size of Smoke Pipe, 10 ins.

Special Equipment furnished with
High Pressure Series:
Automatic Damper Regulator.
Water Relief Valve.
Two 2 in. Brass Clean-out Plugs on
Front Section.

The Burnham

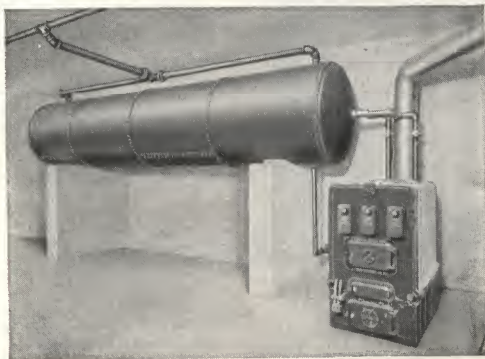


A Typical Hot Water Supply Installation

THIS photograph and diagram shows an installation of the Water Tube Type Boiler made in a 50-family apartment house.

The boiler has 9 sections, rated at 2,500 square feet or 1,665 gallons tank capacity.

The tank is 4 ft. x 16 ft. and holds 1,500 gallons. Both the Boiler and the Tank are made by us.



The Burnham



No. 6. Water Boiler, Five section size.



No. 7. Six section Water Boiler, made by adding intermediate sections.



No. 10. This cut-open view gives you a splendid idea of how the hot smoke and gases travel back and forth between the water lined flues in the round boiler, adding much to its economy.

Round Sectional

THE fire pot proper and the corrugated crown sheet are separate sections.

This makes it decidedly easier to handle, and in case of breakage, only the part, in which the break is, need be bought.

The intermediate sections have flue clean-out openings at both front and rear, so the sections can be swung

The Burnham

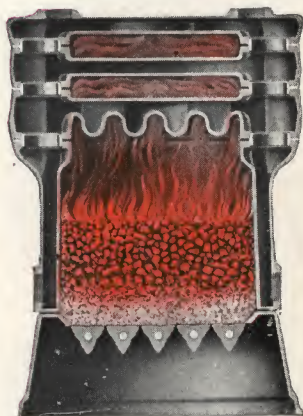


No. 8. Four Section Steam Boiler.



No. 9. Five Section Steam Boiler. Note how all operating parts are handy on the front.

to secure the back and forth fire travel and always have dome section with rear smoke outlet. One means economy in fuel. The other economy in set-up time. The nipple openings are placed on the extreme sides of the boiler where they will not interfere with the flue travel, thereby increasing the surface in direct contact with the hot flames and gases. This results in coal economy.

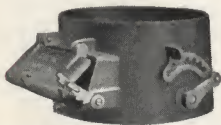


No. 11. By cutting the boiler down through the flues or corrugations of the crown sheet section this way, you get a pretty good idea of the internal arrangement of the boiler and action of fire.

The Burnham



No. 13. Compare the height of these two dome sections. Note how much higher the lower, or steam one is than the upper one, for the water boiler. The space above the part marked "water-line" is the steaming space. Its unusually generous size assures you of dry, hot steam—the kind that gives off the most heat.



No. 14. This straight smoke box is furnished with all boilers, unless ordered otherwise.



No. 15. If you prefer an elbow smoke box, here is the one we will cheerfully send you.

Big Steam Dome

You see from comparing the illustrations at the left that the Steam Boiler is an out-and-out steam boiler, with a full-grown steam dome. The top, or dome section, is two and one-half times as large as on the water boiler, and a good deal larger than any other steam dome on any other round boiler that we know anything about.

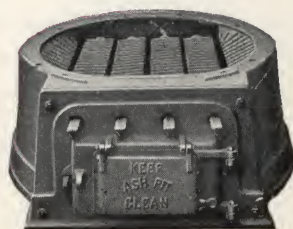
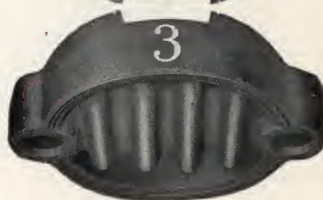
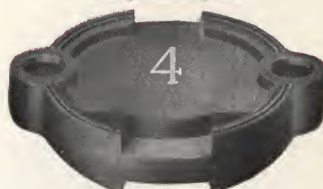
It means dry, hot steam to your radiators—the kind that heats.



The Burnham

Round Sectional Construction

HERE you can see all the sections that are used in the Round Water Boiler. Each separate one at the right is numbered to agree with those on the assembled boiler below, enabling you to see exactly how each is placed. Number 4 is called an intermediate section, because it is used in increasing the boiler from a four to a five or six section boiler. This ease of enlarging is a real advantage.



No. 16. Compare each numbered section with those of the separate sections at the right.

The Burnham

This Tells You How Easy They Are To Operate



All the flue clean-out doors are
handy on the front

IN my time I have heard a good deal of mumbling below stairs about boilers; and a good deal of grumbling above stairs about the same subject. There have been times when the use of certain words of emphasis might be said to have assumed a lurid tone.

Some of them have been prompted because of the fire in certain boilers going out unexpectedly and entirely unwarrantably—quite as collar buttons suddenly disappear under the bureau.

At other times it has been due to grates that stick; or which took a downright husky to shake them.

The Burnham

One time in particular, I recall the man of one house appearing on the scene, Saturday afternoon, following a more than usual series of emphasis from below.

He was dirt from face down.

His frame of mind we will pass over, but it seems it was warranted.

He had been cleaning out the flues and had to crawl around *behind* his boiler and *lie on his back* to do it.

All these trying things are so entirely unnecessary that you wonder why people continue to put up with such boilers. Or stranger still, why they buy them in the first place.

Long ago we overcame all such troublesome troubles in this boiler of ours.



No. 17. Those of you who have tried to get coal in a narrow little fire-box door without scattering it on the floor, will warmly welcome the ample size of all our boiler doors.



No. 18. And the clinker door is made on exactly the same generous sized lines. Plenty of room to remove clinkers, or work a slicing bar up and down, and from side to side.

The Burnham

Take the clean-out doors—every one of them, on every one of our boilers, is right handy on the very front of the boiler.

The easier it is to clean the flues, the oftener they will be cleaned.

And you and I know that the cleaner the flues are kept, the less coal you have to burn.

Then there are the grates; on the round boiler they are of the revolving type. It's no task to turn them. They turn half at a time, making them half again easier to turn.

Except in exceptional cases, they never clinker jam, and when they do, there's that good big-sized clinker door, through which you can easily dislodge them without upsetting your entire fire.

And as for those exasperating goings-out we were speaking about—our extra deep fire-pot is an insurance against that.

The fire-box doors are all generous size, making it easy to put in the coal without banging the scoop against the side and spilling the coal over the floor.

The clinker door just below the fire-box door is long enough and high enough to give you plenty of room to break up any clinkers or break up surface crusting that often forms when soft coal is burned.

The Burnham



No. 19



No. 20



No. 21

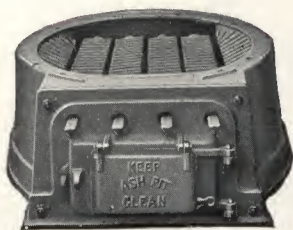
About Grates and Shaking

No. 19. This shows the position of the triangular grates before turning.

Note the three flat faces to the grates, on one of which the fire always lies.

No. 20. And this position of grates shows them in a third of a turn, to cut out the ashes; another third would cut out some of the partly burned coal, leaving the fire bright underneath, ready for quick results.

No. 21. The two-part turn accomplished, the flat face of the grate is back in place and the fire burning merrily. Simplicity itself, isn't it? Quite as easy as rolling off a log.



New Base

All grate bars of each series are same pattern and interchangeable. Shake same as heretofore, in pairs; two grate bars shake at a time.

In back of ash pit front there is a hook casting. When front is taken off all grates rest in place on this hook.

To replace a broken grate bar, simply lift the bar off hook and place in new grate bar.

RATINGS—IMPROVED ROUND SECTIONAL WATER BOILERS

No.	Square Feet† Direct Radiation	Diameter of Grate Inches	Grate Area in Square Feet	Size of Supply Tappings Inches	Size of Return Tappings Inches	Diameter of Smoke Box Inches
184-W	550	18	1.77	2-2	2-2	7
185-W	600	18	1.77	2-2	2-2	7
186-W	650	18	1.77	2-2	2-2	7
204-W	725	20	2.18	2-2½	2-2½	7
205-W	810	20	2.18	2-2½	2-2½	7
206-W	875	20	2.18	2-2½	2-2½	7
234-W	990	23	2.88	2-2½	2-2½	8
235-W	1115	23	2.88	2-2½	2-2½	8
236-W	1200	23	2.88	2-2½	2-2½	8
264-W	1280	26	3.69	2-3	2-3	9
265-W	1445	26	3.69	2-3	2-3	9
266-W	1570	26	3.69	2-3	2-3	9
W-28-4	1860	28	4.28	2-3½	2-3½	10
W-28-5	2075	28	4.28	2-3½	2-3½	10
W-28-6	2230	28	4.28	2-3½	2-3½	10
W-31-4	2230	31	5.25	2-4	2-4	11
W-31-5	2450	31	5.25	2-4	2-4	11
W-31-6	2560	31	5.25	2-4	2-4	11

†Ratings subject to notice on page 47.

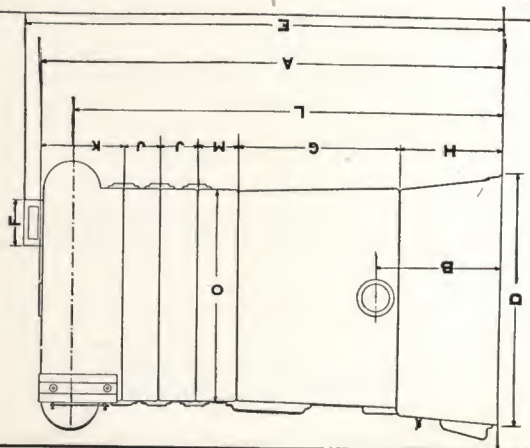
RATINGS—IMPROVED ROUND SECTIONAL STEAM BOILERS

No.	Square Feet† Direct Radiation	Diameter of Grate Inches	Grate Area in Square Feet	Size of Supply Tappings Inches	Size of Return Tappings Inches	Diameter of Smoke Box Inches
184-S	330	18	1.77	2-2	2-2	7
185-S	360	18	1.77	2-2	2-2	7
186-S	390	18	1.77	2-2	2-2	7
204-S	440	20	2.18	2-2½	2-2½	7
205-S	490	20	2.18	2-2½	2-2½	7
206-S	530	20	2.18	2-2½	2-2½	7
234-S	600	23	2.88	2-2½	2-2½	8
235-S	675	23	2.88	2-2½	2-2½	8
236-S	725	23	2.88	2-2½	2-2½	8
264-S	775	26	3.69	2-3	2-3	9
265-S	875	26	3.69	2-3	2-3	9
266-S	950	26	3.69	2-3	2-3	9
S-28-4	1125	28	4.28	2-3½	2-3½	10
S-28-5	1250	28	4.28	2-3½	2-3½	10
S-28-6	1350	28	4.28	2-3½	2-3½	10
S-31-4	1350	31	5.25	2-4	2-4	11
S-31-5	1475	31	5.25	2-4	2-4	11
S-31-6	1550	31	5.25	2-4	2-4	11

†Ratings subject to notice on page 47

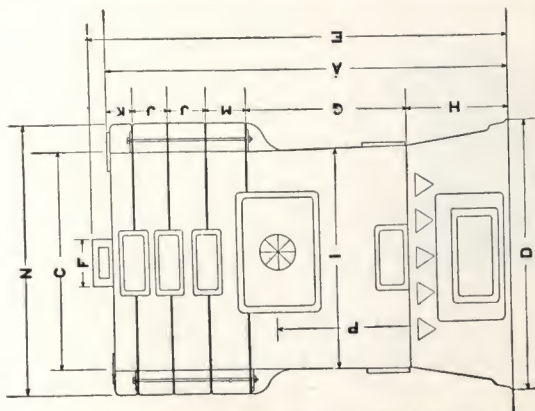
MEASUREMENTS OF IMPROVED ROUND SECTIONAL STEAM BOILERS

No.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
184-S	48 $\frac{1}{4}$	14 $\frac{1}{2}$	19 $\frac{3}{4}$	26	53 $\frac{3}{4}$	7	19 $\frac{3}{4}$	11 $\frac{1}{2}$	20 $\frac{1}{4}$	5	10	42	6 $\frac{1}{2}$	26	20	18
185-S	53 $\frac{1}{2}$	14 $\frac{1}{2}$	19 $\frac{3}{4}$	26	59	7	19 $\frac{3}{4}$	11 $\frac{1}{2}$	20 $\frac{1}{4}$	5	10	47	6 $\frac{1}{2}$	26	20	18
186-S	58 $\frac{3}{4}$	14 $\frac{1}{2}$	19 $\frac{3}{4}$	26	64 $\frac{1}{4}$	7	19 $\frac{3}{4}$	11 $\frac{1}{2}$	20 $\frac{1}{4}$	5	10	52	6 $\frac{1}{2}$	26	20	18
204-S	49 $\frac{1}{4}$	14 $\frac{3}{4}$	22	28	54 $\frac{3}{4}$	7	20 $\frac{1}{4}$	12	22 $\frac{1}{2}$	5	10	43	6 $\frac{1}{2}$	29	22	18
205-S	54 $\frac{1}{2}$	14 $\frac{3}{4}$	22	28	60	7	20 $\frac{1}{4}$	12	22 $\frac{1}{2}$	5	10	48	6 $\frac{1}{2}$	29	22	18
206-S	59 $\frac{3}{4}$	14 $\frac{3}{4}$	22	28	65 $\frac{1}{4}$	7	20 $\frac{1}{4}$	12	22 $\frac{1}{2}$	5	10	53	6 $\frac{1}{2}$	29	22	18
234-S	51 $\frac{1}{2}$	16	24 $\frac{1}{2}$	31	57	8	21	13	25 $\frac{1}{2}$	5	10 $\frac{1}{2}$	45	6 $\frac{1}{2}$	32	25	19
235-S	56 $\frac{3}{4}$	16	24 $\frac{1}{2}$	31	62 $\frac{1}{4}$	8	21	13	25 $\frac{1}{2}$	5	10 $\frac{1}{2}$	50	6 $\frac{1}{2}$	32	25	19
236-S	62	16	24 $\frac{1}{2}$	31	67 $\frac{1}{2}$	8	21	13	25 $\frac{1}{2}$	5	10 $\frac{1}{2}$	55	6 $\frac{1}{2}$	32	25	19
264-S	52 $\frac{1}{2}$	16 $\frac{1}{2}$	27 $\frac{1}{2}$	34	58	9	21	13 $\frac{1}{2}$	28 $\frac{1}{2}$	5	11	46	6 $\frac{1}{2}$	35	28	19
265-S	57 $\frac{3}{4}$	16 $\frac{1}{2}$	27 $\frac{1}{2}$	34	63 $\frac{1}{4}$	9	21	13 $\frac{1}{2}$	28 $\frac{1}{2}$	5	11	51	6 $\frac{1}{2}$	35	28	19
266-S	63	16 $\frac{1}{2}$	27 $\frac{1}{2}$	34	68 $\frac{1}{2}$	9	21	13 $\frac{1}{2}$	28 $\frac{1}{2}$	5	11	56	6 $\frac{1}{2}$	35	28	19
S-28-4	54 $\frac{1}{4}$	17 $\frac{1}{2}$	30 $\frac{1}{2}$	37	60	10	21 $\frac{1}{2}$	14 $\frac{1}{4}$	31 $\frac{1}{2}$	5	11 $\frac{1}{2}$	48	6 $\frac{1}{2}$	38	31	19 $\frac{1}{2}$
S-28-5	59 $\frac{1}{2}$	17 $\frac{1}{2}$	30 $\frac{1}{2}$	37	65 $\frac{1}{4}$	10	21 $\frac{1}{2}$	14 $\frac{1}{4}$	31 $\frac{1}{2}$	5	11 $\frac{1}{2}$	53	6 $\frac{1}{2}$	38	31	19 $\frac{1}{2}$
S-28-6	64 $\frac{3}{4}$	17 $\frac{1}{2}$	30 $\frac{1}{2}$	37	70 $\frac{1}{2}$	10	21 $\frac{1}{2}$	14 $\frac{1}{4}$	31 $\frac{1}{2}$	5	11 $\frac{1}{2}$	58	6 $\frac{1}{2}$	38	31	19 $\frac{1}{2}$
S-31-4	56 $\frac{1}{4}$	18	33 $\frac{3}{4}$	41	62 $\frac{1}{4}$	11	21 $\frac{3}{4}$	14 $\frac{1}{4}$	34 $\frac{1}{2}$	5 $\frac{1}{2}$	11 $\frac{3}{4}$	49	8	42 $\frac{1}{2}$	34	20
S-31-5	62	18	33 $\frac{3}{4}$	41	68	11	21 $\frac{3}{4}$	14 $\frac{1}{4}$	34 $\frac{1}{2}$	5 $\frac{1}{2}$	11 $\frac{3}{4}$	55	8	42 $\frac{1}{2}$	34	20
S-31-6	67 $\frac{3}{4}$	18	33 $\frac{3}{4}$	41	73 $\frac{3}{4}$	11	21 $\frac{3}{4}$	14 $\frac{1}{4}$	34 $\frac{1}{2}$	5 $\frac{1}{2}$	11 $\frac{3}{4}$	61	8	42 $\frac{1}{2}$	34	20

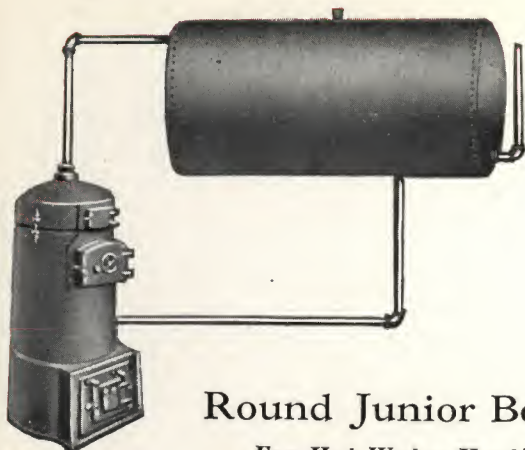


MEASUREMENTS OF IMPROVED ROUND SECTIONAL WATER BOILERS

No.	A	B	C	D	E	F	G	H	I	J	K	M	N	O	P
184-W	42 $\frac{1}{4}$	14 $\frac{1}{2}$	19 $\frac{3}{4}$	26	47 $\frac{3}{4}$	7	19 $\frac{3}{4}$	11 $\frac{1}{2}$	20 $\frac{1}{4}$	5	4	6 $\frac{1}{2}$	26	20	18
185-W	47 $\frac{1}{2}$	14 $\frac{1}{2}$	19 $\frac{3}{4}$	26	53	7	19 $\frac{3}{4}$	11 $\frac{1}{2}$	20 $\frac{1}{4}$	5	4	6 $\frac{1}{2}$	26	20	18
186-W	52 $\frac{3}{4}$	14 $\frac{1}{2}$	19 $\frac{3}{4}$	26	58 $\frac{1}{4}$	7	19 $\frac{3}{4}$	11 $\frac{1}{2}$	20 $\frac{1}{4}$	5	4	6 $\frac{1}{2}$	26	20	18
204-W	43 $\frac{1}{4}$	14 $\frac{3}{4}$	22	28	48 $\frac{3}{4}$	7	20 $\frac{1}{4}$	12	22 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	29	22	18
205-W	48 $\frac{1}{2}$	14 $\frac{3}{4}$	22	28	54	7	20 $\frac{1}{4}$	12	22 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	29	22	18
206-W	53 $\frac{3}{4}$	14 $\frac{3}{4}$	22	28	59 $\frac{1}{4}$	7	20 $\frac{1}{4}$	12	22 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	29	22	18
234-W	45	16	24 $\frac{1}{2}$	31	50 $\frac{3}{4}$	8	21	13	25 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	32	25	19
235-W	50 $\frac{1}{4}$	16	24 $\frac{1}{2}$	31	56	8	21	13	25 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	32	25	19
236-W	55 $\frac{1}{2}$	16	24 $\frac{1}{2}$	31	61 $\frac{1}{4}$	8	21	13	25 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	32	25	19
264-W	45 $\frac{1}{2}$	16 $\frac{1}{2}$	27 $\frac{1}{2}$	34	51	9	21	13 $\frac{1}{2}$	28 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	35	28	19
265-W	50 $\frac{3}{4}$	16 $\frac{1}{2}$	27 $\frac{1}{2}$	34	56 $\frac{1}{4}$	9	21	13 $\frac{1}{2}$	28 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	35	28	19
266-W	56	16 $\frac{1}{2}$	27 $\frac{1}{2}$	34	61 $\frac{1}{2}$	9	21	13 $\frac{1}{2}$	28 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	35	28	19
W-28-4	46 $\frac{3}{4}$	17 $\frac{1}{2}$	30 $\frac{1}{2}$	37	52 $\frac{1}{2}$	10	21 $\frac{1}{2}$	14 $\frac{1}{4}$	31 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	38	31	19 $\frac{1}{2}$
W-28-5	52	17 $\frac{1}{2}$	30 $\frac{1}{2}$	37	57 $\frac{3}{4}$	10	21 $\frac{1}{2}$	14 $\frac{1}{4}$	31 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	38	31	19 $\frac{1}{2}$
W-28-6	57 $\frac{1}{4}$	17 $\frac{1}{2}$	30 $\frac{1}{2}$	37	63	10	21 $\frac{1}{2}$	14 $\frac{1}{4}$	31 $\frac{1}{2}$	5	4	6 $\frac{1}{2}$	38	31	19 $\frac{1}{2}$
W-31-4	48 $\frac{3}{4}$	18	33 $\frac{3}{4}$	41	54 $\frac{3}{4}$	11	21 $\frac{3}{4}$	14 $\frac{1}{4}$	34 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{1}{4}$	8	42 $\frac{1}{2}$	34	20
W-31-5	54 $\frac{1}{2}$	18	33 $\frac{3}{4}$	41	60 $\frac{1}{2}$	11	21 $\frac{3}{4}$	14 $\frac{1}{4}$	34 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{1}{4}$	8	42 $\frac{1}{2}$	34	20
W-31-6	60 $\frac{1}{4}$	18	33 $\frac{3}{4}$	41	66 $\frac{1}{4}$	11	21 $\frac{3}{4}$	14 $\frac{1}{4}$	34 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{1}{4}$	8	42 $\frac{1}{2}$	34	20



The Burnham



Round Junior Boiler

For Hot Water Heating

For heating a hot water supply tank, the Junior Round Boiler is the busiest of little busy bodies. It's surprising what it will do with but little coal and practically no bother.



No. 999 Laundry Stove

Here is a combination stove and hot water heater for laundries. It can be furnished with brass water section.

Top can be used for flat irons or wash boiler. It can be connected directly to a hot water supply tank.

Diameter of Top.....20 inch
Holes.....One 9 inch
 Two $\frac{1}{2}$ 9 inch
Diameter of Grate.....10 inch

Capacity.....80 gallons
Tappings.....1 inch Flow and Ret.
Height.....23 inch

The Burnham

†RATINGS

Number.....	*110	*112	*114	61	81
Diameter Grate, Inches.	10	12	14	16	18
Direct Radiation, sq. ft.	125	200	300	450	550
Tank Capacity, gallons.	175	275	375	550	700
Total Diameter, inches.	16	18	20	26	27
Total Height, inches....	32 $\frac{3}{4}$	36 $\frac{5}{8}$	39	40 $\frac{1}{4}$	41 $\frac{1}{4}$
Size Supply, inches.....	2	2	2 $\frac{1}{2}$	3	3
Size Return, inches.....	2	2	2 $\frac{1}{2}$	3	3
Diam. Smoke Pipe, ins.	5	6	7	7	7

Cast iron bases with legs, suitable for setting boiler on wood floor, can be furnished with Nos. 110, 112 and 114 boilers at special prices.

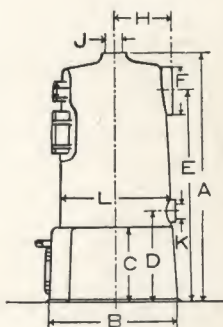
*Brass water sections can be furnished in sizes 110 and 112—114. Special prices on application.

†Ratings subject to notice on page 47.

MEASUREMENTS

No.	A	B	C	D	E
110	32 $\frac{3}{4}$	15 $\frac{3}{4}$	9 $\frac{1}{2}$	11 $\frac{1}{2}$	27 $\frac{3}{8}$
112	36 $\frac{5}{8}$	17 $\frac{3}{4}$	10 $\frac{5}{8}$	12 $\frac{1}{4}$	30 $\frac{3}{4}$
114	39	19 $\frac{7}{8}$	11 $\frac{3}{4}$	14 $\frac{1}{8}$	33
61	40 $\frac{1}{4}$	25 $\frac{5}{8}$	11 $\frac{1}{2}$	14 $\frac{1}{2}$	33 $\frac{7}{8}$
81	41 $\frac{1}{4}$	27	12	14 $\frac{5}{8}$	34 $\frac{5}{8}$

No.	F	H	J	K	L
110	5	7 $\frac{7}{8}$	2	2	14
112	6	8 $\frac{1}{4}$	2	2	16
114	7	9 $\frac{3}{8}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	18
61	7	10 $\frac{5}{8}$	3	3	21 $\frac{1}{4}$
81	7	11 $\frac{9}{16}$	3	3	22



The Burnham

REPAIR PRICE LIST "A" SQUARE SECTIONAL BOILER

SERIES—	18"	24"	30"	36"
Steam Front Section	\$104.00	\$135.00	\$170.00	\$225.00
Back Section.....	108.00	150.00	190.00	245.00
Intermediate Section.....	75.00	105.00	135.00	170.00
Water, Front Section	85.00	122.00	155.00	200.00
Back Section.....	90.00	130.00	165.00	215.00
Intermediate Section.....	65.00	90.00	115.00	145.00
Hub Section.....	75.00	100.00	125.00	160.00
Nipples, Large	1.00	1.00	1.50	1.50
Small.....	1.00	1.00	1.00	1.00
Set (3).....	3.00	3.00	3.50	3.50
Smoke Box, Complete	16.25	27.05	35.00	44.25
Open.....	5.50	9.50	11.00	15.00
Plain.....	5.00	8.60	13.00	15.50
Damper.....	1.75	2.00	3.50	4.00
Collar.....	1.75	3.50	4.50	6.00
Buttons (Four) each.....	.25	.25	.25	.25
Check Door.....	1.00	1.30	1.75	2.50
Ratchet.....	.25	.25	.25	.25
Cleanout Door, Centre	1.75	2.50	3.50	3.50
Side.....	1.00	1.50	1.50	1.50
Frame, Center.....	1.75	2.25	2.50	2.50
Side.....	1.00	1.50	1.50	1.50
Coil Hole Plates (Set).....	.45	.45	.45	.45
Fire Door Frame	6.00	7.00	7.00	9.00
Complete.....	7.75	9.00	9.00	13.00
Door and Register.....	5.75	6.00	6.00	9.00
Lining.....	2.00	3.00	3.00	4.00
Name Plates (Two) Per Set	2.00	2.00	2.00	2.00
Clinker Door	2.50	2.80	3.00	3.20
Pull Rod, 4 and 5 Sect.	1.00	1.00	1.00	1.00
Each Additional Sect.....	.20	.20	.20	.20
Grate Bars, Regular	6.00	8.00	10.00	12.00
Pea Coal.....	6.00	9.00	12.00	14.00
Wood and Soft Coal.....	6.50	9.00	9.00	10.00
Finger Grates	2.25	3.00	5.00	5.50
Grate Bar Lugs and Bolts				
For Regular and Pea Coal.....	.70	.70	.70	.70
For Wood and Soft Coal.....	1.00	1.00	1.00	1.00
Ashpit Front				
(Inc. Clinker Door Frame).....	10.00	12.00	14.00	16.00
Back.....	10.00	13.00	15.00	18.00
Door Complete.....	5.75	6.25	9.00	10.25
Door Only.....	4.00	4.50	6.25	7.00
Drop Door.....	1.50	1.50	2.50	3.00
Ratchet.....	.25	.25	.25	.25
Ashpit Sides				
1 Section Extension.....	4.50	5.00	5.50	5.50
4 Section Side.....	14.00	16.00	.....	.....
5 Section Side.....	17.00	20.00	20.00	20.00
6 Section Side.....	20.00	24.00	24.00	24.00
7 Section Side.....	23.00	28.00	28.00	28.00
8 Section Side.....	.....	32.00	32.00	32.00
9 Section Side.....	.....	.....	36.00	36.00
Shaker Bracket, Single	3.00	.....	.....	.....
Double.....	4.00	4.00	5.00	5.00
Socket.....	1.80	1.80	1.80	1.80
Handle.....	2.50	2.50	2.50	2.50
Connecting Bars				
For 4 Section Boilers, Single.....	2.50	.....	.....	.....
For 5 Section Boilers, Double.....	3.80	3.80	3.80	3.80

The Burnham

REPAIR PRICE LIST "A" SQUARE SECTIONAL BOILER

—Continued

SERIES—	18"	24"	30"	36"
For 6 Section Boilers, Double.....	4.50	4.50	4.50	4.50
For 7 Section Boilers, Double.....	5.40	5.40	5.40	5.40
For 8 Section Boilers, Double.....	6.30	6.30	6.30	6.30
For 9 Section Boilers, Double.....	7.20	7.20	7.20	7.20
For 10 Section Boilers, Double.....	7.80	7.80	7.80	7.80
For 11 Section Boilers, Double.....	8.50	8.50	8.50	8.50
Water Column.....	4.00	4.00	6.00	6.00
Damper Regulator.....	10.50	10.50	10.50	10.50
Rubber Diaphragm, 7 inch.....	1.50	1.50	1.50	1.50
14 inch.....	5.00	5.00	5.00	5.00
Jack Chain, Per Foot.....	.07	.07	.07	.07
Draw Up Bolts.....	.10	.10	.10	.10
Stove Putty, Per Can.....	2.00	2.00	2.00	2.00
Firetool, Complete Set.....	8.20	8.20	8.20	8.20
Poker.....	2.50	2.50	2.50	2.50
Hoe Handle.....	1.50	1.50	1.50	1.50
Hoe Blade.....	1.50	1.50	1.50	1.50
Flue Brush.....	1.10	1.10	1.10	1.10
Flue Brush Handle.....	1.60	1.60	1.60	1.60

List "A" Applies to Boilers Bearing Following Numbers:

18" Series		24" Series		30" Series		36" Series	
Water	Steam	Water	Steam	Water	Steam	Water	Steam
W-18-4	S-18-4	W-24-4	S-24-4	W-30-5	S-30-5	W-36-5	S-36-5
W-18-5	S-18-5	W-24-5	S-24-5	W-30-6	S-30-6	W-36-6	S-36-6
W-18-6	S-18-6	W-24-6	S-24-6	W-30-7	S-30-7	W-36-7	S-36-7
W-18-7	S-18-7	W-24-7	S-24-7	W-30-8	S-30-8	W-36-8	S-36-8
		W-24-8	S-24-8	W-30-9	S-30-9	W-36-9	S-36-9
						W-36-10	S-36-10
						W-36-11	S-36-11
						W-36-12	S-36-12
						W-36-13	S-36-13

REPAIR PRICE LIST "B" OLD STYLE SQUARE BOILERS

For all parts not shown in the following, use List A.

SERIES—	18"	24"	30"	36"
Steam Sections				
Front.....	\$94.00	\$128.00	\$170.00	\$250.00
Back.....	96.00	143.00	190.00	270.00
Intermediate.....	70.00	94.00	135.00	190.00
Water Sections				
Front.....	79.00	116.00	155.00	220.00
Back.....	80.00	122.00	165.00	240.00
Intermediate.....	62.00	80.00	115.00	164.00
Hub.....	70.00	.....	125.00	.....
Nipples				
Large.....	1.00	1.50	1.50	2.00
Small.....	1.00	1.00	1.00	1.20
Set of 3.....	3.00	3.50	3.50	4.40
Clinker Door Frame.....	3.00	4.00	5.00	6.00

List "B" Applies to Boilers Bearing the Following Numbers:

18" Series		24" Series		30" Series		36" Series	
Water	Steam	Water	Steam	Water	Steam	Water	Steam
418	410	524	520	546	540	536	530
518	510	624	620	646	640	636	630
618	610	724	720	746	740	736	730
718	710	824	820	846	840	836	830
818	810	924	920	946	940	936	930
						1036	1030

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REPAIR PRICE LIST "C" ROUND SECTIONAL BOILERS

	SIZE OF GRATE			
	18"	20"	23"	26"
Sections				
Firepot.....	\$60.00	\$70.00	\$90.00	\$120.00
Corrugated.....	36.00	41.00	50.00	60.00
Intermediate.....	26.00	30.00	38.00	47.00
Water Dome.....	26.00	30.00	40.00	46.00
Steam Dome.....	54.00	65.00	85.00	106.00
Nipples, each.....	1.00	1.00	1.20	1.30
Tie Bolts (Set 4).....	1.00	1.00	1.00	1.00
Coil Hole Plates (2 Sets) Per Set.....	.45	.45	.45	.45
Rear Cleanout Plate.....	1.00	1.00	1.00	1.00
Cleanout Door.....	1.00	1.00	1.00	1.00
Cleanout Door Frame.....	2.00	2.00	2.00	2.00
Clinker Door.....	1.00	1.00	1.00	1.50
Clinker Door Frame.....	2.00	2.00	2.00	2.00
Fire Door and Lining.....	4.50	4.50	5.00	5.00
Fire Door Frame.....	6.00	6.00	6.00	6.00
Name Plates.....	2.00	2.00	2.00	2.00
Smoke Box, Complete.....	9.00	9.00	11.50	14.00
Check Door.....	.65	.65	.90	1.00
Check Door Ratchet.....	.25	.25	.25	.25
Damper.....	1.10	1.10	1.50	1.75
Damper Ratchet.....	1.00	1.00	1.00	1.00
Ashpit, Complete.....	41.75	54.00	73.00	91.00
Shell.....	19.00	30.00	40.00	48.00
Front.....	5.25	5.50	6.00	7.00
Door Complete.....	4.50	4.50	5.00	6.00
Door Only.....	3.00	3.00	3.25	4.00
Drop Door.....	1.25	1.25	1.50	1.75
Drop Door Ratchet.....	.25	.25	.25	.25
Grate Bars, each.....	(4)3.25	(4)3.50	(4)5.50	(5)6.00
Grate Bars, Complete Set.....	13.00	14.00	22.00	30.00
Shaker Handle.....	1.00	1.00	1.00	1.20
Damper Regulator.....	10.50	10.50	10.50	10.50
Rubber Diaphragm.....	1.50	1.50	1.50	1.50
Fire Tools, Complete Set.....	5.45	5.45	5.45	5.45
Hoe.....	1.65	1.65	1.65	1.65
Poker.....	1.45	1.45	1.45	1.45
Flue Brush.....	.90	.90	.90	.90
Flue Brush Handle.....	1.45	1.45	1.45	1.45
Jack Chain, Per Foot.....	.07	.07	.07	.07
Stove Putty.....	1.00	1.00	1.00	1.00

Boilers Bearing the Following Numbers Apply to List "C":

184-S	234-S	184-W	234-W
185-S	235-S	185-W	235-W
186-S	236-S	186-W	236-W
204-S	264-S	204-W	264-W
205-S	265-S	205-W	265-W
206-S	266-S	206-W	266-W

The Burnham

REPAIR PRICE LIST "D" ROUND SECTIONAL BOILERS

	SIZE OF GRATE					
	17"	19"	22"	25"	28"	31"
Sections						
Firepot.....	\$60.00	\$70.00	\$90.00	\$120.00	\$140.00	\$160.00
Corrugated.....	36.00	41.00	50.00	60.00	70.00	80.00
Intermediate.....	26.00	30.00	38.00	47.00	60.00	70.00
Water Dome.....	26.00	30.00	40.00	46.00	58.00	68.00
Steam Dome.....	54.00	65.00	85.00	106.00	126.00	142.00
Nipples.....	1.00	1.00	1.20	1.30	1.50	1.75
Tie Bolts.....	1.00	1.00	1.00	1.00	1.00	1.00
Coil Hole Plates.....	.45	.45	.45	.45	.45	.45
Rear Cleanout Plate	1.00	1.00	1.00	1.00	1.00	1.50
Cleanout Door.....	1.00	1.00	1.00	1.00	1.25	1.25
Cleanout Dr. Frame	2.00	2.00	2.00	2.00	2.00	2.25
Clinker Door.....	1.00	1.00	1.00	1.50	1.50	1.50
Clinker Door Frame	2.00	2.00	2.00	2.00	2.00	2.20
Fire Door and Lining	4.50	4.50	5.00	5.00	5.50	6.00
Fire Door Frame.....	6.00	6.00	6.00	6.00	6.50	6.50
Name Plates.....	2.00	2.00	2.00	2.00	2.00	2.00
Smoke Box						
Complete.....	9.00	9.00	11.50	14.00	17.00	20.00
Check Door.....	.65	.65	.90	1.00	1.25	1.50
Check Door Ratchet	.25	.25	.25	.25	.25	.25
Damper.....	1.10	1.10	1.50	1.75	1.75	2.00
Damper Ratchet.....	1.00	1.00	1.00	1.00	1.00	1.00
Ashpit, Complete.....	40.25	53.00	71.00	84.00	99.75	127.25
Shell.....	19.00	30.00	40.00	48.00	55.00	70.00
Front.....	5.25	5.50	6.00	7.00	8.00	10.00
Door Complete.....	4.50	4.50	5.00	6.00	6.75	7.25
Door Only.....	3.00	3.00	3.25	4.00	4.50	4.75
Drop Door.....	1.25	1.25	1.50	1.75	2.00	2.25
Drop Door Ratchet.....	.25	.25	.25	.25	.25	.25
Grate Bars						
Complete Set.....	11.50	13.00	20.00	23.00	30.00	40.00
Centre.....	3.25	3.50	5.50	5.00	5.30	7.50
End.....	2.50	3.00	4.50	4.00	4.40	5.50
Intermediate.....	.....	.....	.....	5.00	5.30	7.00
Shaker Handle.....	1.00	1.00	1.00	1.20	1.20	1.20
Damper Regulator.....	10.50	10.50	10.50	10.50	10.50	10.50
Rubber Diaphragm.....	1.50	1.50	1.50	1.50	1.50	1.50
Fire Tools						
Complete Set.....	5.45	5.45	5.45	5.45	5.45	5.45
Hoe.....	1.65	1.65	1.65	1.65	1.65	1.65
Poker.....	1.45	1.45	1.45	1.45	1.45	1.45
Flue Brush.....	.90	.90	.90	.90	.90	.90
Flue Brush Handle.....	1.45	1.45	1.45	1.45	1.45	1.45
Jack Chain per ft. ....	.07	.07	.07	.07	.07	.07
Stove Putty.....	1.00	1.00	1.00	1.00	1.00	1.00

Boilers Bearing the Following Numbers Apply to List "D":

S-17-4	S-25-4	W-17-4	W-25-4
S-17-5	S-25-5	W-17-5	W-25-5
S-17-6	S-25-6	W-17-6	W-25-6
S-19-4	S-28-4	W-19-4	W-28-4
S-19-5	S-28-5	W-19-5	W-28-5
S-19-6	S-28-6	W-19-6	W-28-6
S-22-4	S-31-4	W-22-4	W-31-4
S-22-5	S-31-5	W-22-5	W-31-5
S-22-6	S-31-6	W-22-6	W-31-6

The Burnham

REPAIR PRICE LIST "E" ROUND SECTIONAL BOILERS

	SIZE OF GRATES					
	16"	18"	21"	24"	27"	30"
Sections						
Firepot.....	\$86.00	\$104.00	\$140.00	\$174.00	\$210.00	\$240.00
Intermediate.....	27.00	30.00	40.00	52.00	64.00	74.00
Water Dome.....	26.00	30.00	40.00	50.00	60.00	72.00
Steam Dome.....	56.00	65.00	85.00	106.00	130.00	145.00
Nipples.....	1.00	1.00	1.20	1.30	1.50	1.75
Tie Bolts.....	1.00	1.00	1.00	1.00	1.00	1.00
Coil Hole Plates.....	.45	.45	.45	.45	.45	.45
Cleanout Door.....	1.00	1.00	1.00	1.00	1.25	1.25
Cleanout Door Frame	2.00	2.00	2.00	2.00	2.00	2.25
Clinker Door.....	1.00	1.00	1.00	1.50	1.50	1.50
Clinker Door Frame	2.00	2.00	2.00	2.00	2.00	2.20
Firedoor and Lining	4.50	4.50	5.00	5.00	5.50	6.00
Firedoor and Frame	6.00	6.00	6.00	6.00	6.50	6.50
Nameplates.....	2.00	2.00	2.00	2.00	2.00	2.00
Smoke Box.....	9.00	9.00	11.50	14.00	17.00	20.00
Check Door.....	.65	.65	.90	1.00	1.25	1.50
Check Door Ratchet	.25	.25	.25	.25	.25	.25
Damper.....	1.10	1.10	1.50	1.75	1.75	2.00
Damper Ratchet....	1.00	1.00	1.00	1.00	1.00	1.00
Ashpit, Complete....	40.25	53.00	71.00	84.00	99.75	127.25
Ashpit Shell.....	19.00	30.00	40.00	48.00	55.00	70.00
Ashpit Front.....	5.25	5.50	6.00	7.00	8.00	10.00
Ashpit Door						
Complete.....	4.50	4.50	5.00	6.00	6.75	7.25
Ashpit Door Only...	3.00	3.00	3.25	4.00	4.50	4.75
Ashpit Drop Door...	1.25	1.25	1.50	1.75	2.00	2.25
Ashpit Drop Door						
Ratchet.....	.25	.25	.25	.25	.25	.25
Grate Bars						
Complete Set.....	11.50	13.00	20.00	23.00	30.00	40.00
Centre.....	3.25	3.50	5.50	5.00	5.30	7.50
End.....	2.50	3.00	4.50	4.00	4.40	5.50
Intermediate.....				5.00	5.30	7.00
Shaker Handles	1.00	1.00	1.00	1.20	1.20	1.20
Damper Regulator...	10.50	10.50	10.50	10.50	10.50	10.50
Rubber Diaphragm.	1.50	1.50	1.50	1.50	1.50	1.50
Firetools						
Complete Set.....	5.45	5.45	5.45	5.45	5.45	5.45
Hoe.....	1.65	1.65	1.65	1.65	1.65	1.65
Poker.....	1.45	1.45	1.45	1.45	1.45	1.45
Flue Brush.....	.90	.90	.90	.90	.90	.90
Flue Handle.....	1.45	1.45	1.45	1.45	1.45	1.45
Jack Chain, Per Foot	.07	.07	.07	.07	.07	.07
Stove Putty.....	1.00	1.00	1.00	1.00	1.00	1.00

Boilers Bearing the Following Numbers Apply to List "E":

S-216	S-224	W-216	W-224
S-316	S-324	W-316	W-324
S-416	S-424	W-416	W-424
S-218	S-227	W-218	W-227
S-318	S-327	W-318	W-327
S-418	S-427	W-418	W-427
S-221	S-230	W-221	W-230
S-321	S-330	W-321	W-330
S-421	S-430	W-421	W-430

The Burnham

REPAIR PRICE LIST "F" JUNIOR TANK HEATERS

	No. 110	No. 112	No. 114	No. 61	No. 81
Firepot.....	\$50.00	\$65.00	\$75.00	\$105.00	\$135.00
Frame for Fire and Clean Out Door.....	2.20	2.65	3.20	5.00	5.40
Fire Door Complete.....	1.45	1.90	2.25	3.60	4.10
Cleanout Door.....	.65	.75	.75	1.45	1.65
Shaker Handle.....	.80	.80	.90	1.00	1.00
Ashpit, Complete.....	21.50	28.50	33.50	41.75	54.00
Shell.....	12.00	16.00	18.00	19.00	30.00
Front.....	1.80	2.35	3.00	5.25	5.50
Door.....	1.20	1.65	2.00	3.00	3.00
Drop Door.....	.75	.75	.75	1.25	1.25
Ratchet.....	.25	.25	.25	.25	.25
Grate Bars, Complete Set.....	5.50	7.50	9.50	13.00	14.00
Centre.....	2.20	2.80	3.50	3.25	3.50
End.....	1.65	2.35	3.00	3.25	3.50
Sub Base.....	4.20	4.60	5.00	.....	.....

QUANTITY OF ASBESTOS REQUIRED TO COVER BOILERS ONE INCH THICK

Based on using a grade of asbestos cement that will cover forty square feet per hundred pounds.

ROUND SECTIONAL

No. of Boiler	No. of Pounds	No. of Boiler	No. of Pounds	No. of Boiler	No. of Pounds	No. of Boiler	No. of Pounds
184-W.....	50	264-W.....	80	184-S.....	65	264-S.....	100
185-W.....	65	265-W.....	110	185-S.....	80	265-S.....	130
186-W.....	80	266-W.....	140	186-S.....	95	266-S.....	170
204-W.....	60	W-28-4.....	90	204-S.....	75	S-28-4.....	120
205-W.....	75	W-28-5.....	130	205-S.....	90	S-28-5.....	160
206-W.....	90	W-28-6.....	170	206-S.....	105	S-28-6.....	200
234-W.....	70	W-31-4.....	100	234-S.....	90	S-31-4.....	125
235-W.....	95	W-31-5.....	150	235-S.....	115	S-31-5.....	175
236-W.....	120	W-31-6.....	200	236-S.....	140	S-31-6.....	225

SQUARE SECTIONAL

W-18-4.....	175	W-36-6.....	390	S-18-4.....	200	S-36-6.....	420
W-18-5.....	225	W-36-7.....	455	S-18-5.....	260	S-36-7.....	490
W-18-6.....	275	W-36-8.....	520	S-18-6.....	320	S-36-8.....	560
W-18-7.....	325	W-36-9.....	585	S-18-7.....	380	S-36-9.....	630
W-24-5.....	275	W-36-10.....	650	S-24-5.....	300	S-36-10.....	700
W-24-6.....	330	W-36-11.....	715	S-24-6.....	360	S-36-11.....	770
W-24-7.....	385	W-50-6.....	800	S-24-7.....	420	S-50-6.....	800
W-24-8.....	440	W-50-7.....	900	S-24-8.....	480	S-50-7.....	900
W-30-5.....	275	W-50-8.....	1000	S-30-5.....	300	S-50-8.....	1000
W-30-6.....	330	W-50-9.....	1100	S-30-6.....	360	S-50-9.....	1100
W-30-7.....	385	W-50-10.....	1200	S-30-7.....	420	S-50-10.....	1200
W-30-8.....	440	W-50-11.....	1300	S-30-8.....	480	S-50-11.....	1300
W-30-9.....	495	W-50-12.....	1400	S-30-9.....	540	S-50-12.....	1400

ROUND JUNIOR

No. of Boiler	No. of Pounds
110.....	25
112.....	30
114.....	40
61.....	50
81.....	60

WATER TUBE TYPE

No. of Boiler	No. of pounds
W-21-4.....	200
W-21-5.....	250
W-21-6.....	300
W-21-7.....	350
W-21-8.....	400
W-21-9.....	450
W-21-10.....	500

We carry a large stock of Asbestos Cement and can ship same with your boiler order.

The Burnham

REPAIR PRICE LIST "G"

50 INCH TWIN SECTIONAL

Sections		Draw Up Bolts	
Left Front.....	\$185.00	$\frac{5}{8}$ x 4".....	.10
Right Front.....	185.00	$\frac{5}{8}$ x 12".....	.25
Left Back.....	215.00	$\frac{5}{8}$ x 14".....	.25
Right Back.....	215.00	$\frac{5}{8}$ x 15".....	.25
R. and L. Inter, Plain...	165.00		
R. and L. Inter., Tapped.	165.00		
Push Nipple, 4".....	1.20	Shaker Brackets.....	5.00
Push Nipple, 6".....	2.00	Socket.....	1.80
		Handle.....	2.50
Smoke Box, Complete....	110.00	Centre Grate Rest	
Collar.....	11.00	6 Section.....	16.00
Right Side.....	40.00	7 Section.....	18.50
Left Side.....	40.00	8 Section.....	21.00
Check Door.....	3.50	9 Section.....	23.50
Hinge Piece.....	.50	10 Section.....	36.00
Lugs (4) each.....	.25	Center Bar Rest.....	3.00
Damper.....	14.00		
Cleanout Door (7), each..	3.00	Grate Connecting Bars	
Frame (7), each.....	4.00	(each set)	
Fire Door, Complete.....	13.50	For 6 Section Boiler....	7.25
Door Only.....	9.00	7 Section Boiler.....	8.70
Lining.....	4.00	8 Section Boiler.....	10.25
Frame.....	9.00	9 Section Boiler.....	11.80
Vent Wheel.....	.50	10 Section Boiler....	13.25
Grate Bar, each.....	8.00	11 Section Boiler.....	14.50
Grate Bar Lugs.....	1.50	12 Section Boiler....	16.00
Finger Grate.....	3.00		
Finger Grate Lug.....	1.50	Stop Casting (to hold	
Clinker Door (2) each...	3.50	grates on connecting bars)	.50
Ashpit, Front.....	44.00	Front Top Centre Cover...	3.00
Back.....	50.00	Front Bottom Centre Cover	3.00
Door (2) each.....	7.00	Rear Top Centre Cover...	3.00
Base Sides		Rear Bottom Centre Cover.	3.00
1 Section Panel.....	11.00	Intersectional Casting....	3.00
2 Section Panel.....	23.00	Syphon $\frac{1}{4}$ ".....	.30
3 Section Panel.....	35.00	Hoe.....	4.50
4 Section Panel.....	47.00	Poker.....	4.50
6 Section Panel.....	70.00	Flue Brush.....	1.25
6 Section Panel, with		Flue Brush Handle.....	2.00
Draft Door Opening...	70.00		
Draft Door.....	6.00	List "F" Applies to Boilers Bearing	
Frame.....	2.50	Following Numbers:	
Lift Pin.....	2.00	S-50- 6	W-50- 6
Pull Rod, 6 section.....	1.60	S-50- 7	W-50- 7
Each Additional Section...	.20	S-50- 8	W-50- 8
		S-50- 9	W-50- 9
		S-50-10	W-50-10
		S-50-11	W-50-11
		S-50-12	W-50-12

Rating Notice

THE ratings given in catalog provide that in estimating the size of boiler required, all piping (mains and risers, flow and return) shall be figured as radiating surface, in addition to direct radiation to be used. Also that the radiation is proportioned to heat the building to 70 degrees with two column, cast iron radiators of standard height; that the boiler is attached to a flue of sufficient capacity and draft.

They are based on a standard of two pounds pressure at the boiler for steam, and a temperature of 180 degrees F. for water.

In estimating the size of boiler, add 25% to direct indirect radiation, and 50% to indirect radiation. When a pipe coil or cast iron section is introduced into the firepot for the purpose of heating water for domestic use, additional capacity should be figured in determining size of boiler, viz.: one and a quarter square feet of direct radiation for steam, and two square feet of direct radiation for hot water, for each gallon to be thus heated per hour.

EXAMPLE (Steam or Water)

Direct Radiation.....		1000 sq. ft.
Pipe Coils.....	100 sq. ft. + 25%	125 sq. ft.
Indirect Radiation.....	200 sq. ft. + 50%	300 sq. ft.
Risers.....		75 sq. ft.
Uncovered Mains.....	100 + 50%	150 sq. ft.
Coils for heating water for domestic use (see above)...		100 sq. ft.
		<hr/> 1750 sq. ft.

In estimating the size of boiler required, all unusual conditions (such as churches, garages, greenhouses, etc.), should be taken into consideration and allowances made for them.

In greenhouse heating, pipe coils underneath the benches are considerably more efficient per square foot of surface than regular cast iron column radiation. This is especially true in steam heating

The Burnham

apparatus, where one and one-quarter inch pipe coils are used.

The condensation in the pipes when used for this class of work is from 50% to 60% more than in the average cast iron column radiator. This should also be considered when figuring for buildings and rooms requiring a low inside temperature (such as stores, factories, garages, storage buildings, etc.) for the reason that radiation at a low temperature will condense more steam per square foot of surface than in rooms heated to 70 degrees.

When radiators are placed at a considerable distance from the boiler, always allow extra boiler power to cover the loss due to friction in transmission from boiler to heating surfaces.

Hard Coal, Stove or Egg size, is the standard fuel upon which boiler capacities are based. In using Pea Coal, or smaller size coal, a larger sized grate is recommended, owing to the fact that these sizes of coal pack so much closer that the air cannot get through the coal so easily, the result being with the same depth of fire they burn more slowly than the average size. Using soft coal having a heat making value equal to hard coal, requires a boiler of 25% more coal holding capacity to hold an equal weight of fuel, as one cubic foot of hard coal weighs approximately fifty pounds, while one cubic foot of soft coal weighs approximately forty pounds.

The heat making value of Anthracite Coal averages about 12,000 B. T. U. per pound, while some soft coals run as low as 9,000 B. T. U. per pound, and when coal of a lower heat-making value is to be used, a boiler having a fire-pot of corresponding larger fuel-holding capacity should be selected.

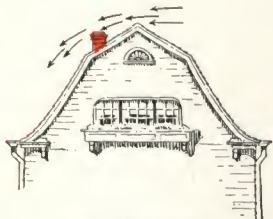
In using boilers for soft coal, it is desirable to use as short a boiler as possible, for example: instead of using a No. W18-7, use a No. W-24-5.

Chimney Facts



BEWARE OF THIS CHIMNEY CONSTRUCTION

When the chimney is lower, or even with the ridge, the air currents go down into the chimney, producing a down draft. Sometimes your fire will draw, but more often it won't.



AND THIS ONE

Where one part of the roof is lower than another, the chimney on that part should be extended 2 feet above the higher one, otherwise you'll have the same down draft.



THE CORRECT CONSTRUCTION

Make sure the chimney extends at least 2 feet above the peak of the roof, then no air currents can affect the draft.

ONE of the principal causes for the failure of a heating apparatus is poor draft, due to defective chimneys. In order to get best results the area of the flue should be ample in size and the chimney should be carried as nearly straight as possible. The flue should have no connection with other flues or openings and should be the same size from bottom to top. The inside surfaces should be smooth, and all joints tight.

The top of the chimney should be from 2 to 4 feet higher than the highest point of the roof, and so located that nearby higher buildings will not form eddies in the wind currents and force the air downward. The lower part of the chimney should extend but a short distance below the entrance of the smoke pipe and be provided with a clean-out door at the lowest point, for removing accumulated dust and soot. The boiler should be set as near the chimney as possible, and the smoke pipe must not project into the chimney too far, as this will lessen the draft.

Chimney Facts

(Continued)

Due allowance must also be made for a new chimney, as it will not draw properly until it is dried out, which will take probably from one to two weeks.

The following table gives the average size flue required for the size of boiler.

Area Dimensions given are inside Measurements of the Masonry Walls of the Chimney

BOILER CAPACITY		NO. OF HEATERS ATTACHED TO FLUE			
Hot Water Rating Sq. Ft.	Steam (Direct) Rating Sq. Ft.	1		2	
		Dimensions Inches	Height Feet	Heaters cross-connected forming a battery and attached to one flue opening	
To 700	To 450	8x12	35	Dimensions Inches	Height Feet
900	600	8x12	35		
1100	700	8x12	40	Dimensions Inches	Height Feet
1500	1000	12x12	35		
2500	1500	12x12	40	12x16	45
4000	2500	12x16	40	16x20	50
5800	3600	16x16	45	20x24	55
7300	4500	16x20	50	24x24	60
8700	5400	20x20	55	24x28	65
10000	6400	20x24	60	28x28	70
12000	7400	24x24	65	30x30	75
14000	8400	24x28	65	32x32	75
15000	9400	28x28	70	30x36	80
17000	10400	28x32	70	30x36	80
19000	11400	30x30	70	36x36	80

Where round tile flue lining is used in place of rectangular, the nearest corresponding area shall be taken.

Cleaning Chimney Flues

A good method for cleaning the chimney is to sweep it with a heavily weighted bundle of rags, or a brush attached to a rope, and worked from the top. Some fitters use the chains from their automobile tires, lowering them inside chimney.

The U. S. Fuel Administration advocates the use of salt.

The fire should be put in good condition, with a substantial bed of hot fuel; then scatter well dried common salt over the fuel bed, in quantity depending upon the size of boiler. For an ordinary residence, a pound at a time is ample. The dampers should be kept open to maintain the temperature of boiler, until the fumes entirely disappear. This usually takes about half an hour.

The soot is disintegrated by the action of the salt fumes. Repeat the application if necessary.

Blowing Off a Steam Boiler

One of the causes of a boiler foaming and producing an unsteady water line and preventing the generation of steam is the accumulation of oil and grease in a new system. Every boiler, therefore, should be blown off within a week after it is first installed.

If one cleaning does not result in proper generation of steam and steady water line, the boiler should be blown off again. Sometimes it is necessary to blow off a boiler three or four times or even more. One method to do this is as follows:

Remove the safety valve and damper regulator from the boiler. Connect the tapping for the safety valve or the surface blow-off opening to a pipe of sufficient capacity for the size of the boiler. Close all radiator valves or if the mains are valved close both flow and return valves tightly. Fill the boiler to the top of the gauge glass with water.

Build sufficient fire to keep water boiling and blow water and steam out through the safety valve tapping or blow-off tapping referred to above.

Maintain the steam pressure at 15 lbs. and continue the blowing off for two hours. Supply sufficient cold water to keep the water line at the top of gauge. Close off the water feed valve and reduce the water line to proper level by draining through the draw-off cock at the bottom of the boiler. Replace safety valve, damper regulator and open all radiator valves on the mains.

The boiler is then ready for operation.

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Wrought Pipe Data

Size	Actual Outside Diameter	Actual Inside Diameter	Inside Area	Outside Circumference	Inside Circumference	Weight Per Foot	Square Feet of Outside or Radiating Surface Per Lin. Ft. Pipe
$\frac{1}{2}$	.840	.622	.304	2.639	1.954	.855	.220
$\frac{3}{4}$	1.050	.824	.533	3.299	2.589	1.140	.275
1	1.315	1.049	.864	4.131	3.296	1.690	.344
$1\frac{1}{4}$	1.660	1.380	1.496	5.215	4.335	2.290	.434
$1\frac{1}{2}$	1.900	1.610	2.036	5.969	5.058	2.740	.497
2	2.375	2.067	3.356	7.461	6.494	3.690	.622
$2\frac{1}{4}$	2.875	2.469	4.778	9.032	7.757	5.850	.753
3	3.500	3.068	7.393	10.996	9.638	7.660	.916
$3\frac{1}{2}$	4.000	3.548	9.887	12.566	11.146	9.240	1.047
4	4.500	4.026	12.730	14.137	12.648	10.900	1.178
$4\frac{1}{2}$	5.000	4.506	15.947	15.708	14.156	12.700	1.309
5	5.563	5.047	20.006	17.477	15.856	14.900	1.456
6	6.625	6.065	28.890	20.813	19.054	19.200	1.734
7	7.625	7.023	38.780	23.955	22.063	23.800	1.996
8	8.625	7.981	50.027	27.096	25.073	28.900	2.258

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Connecting Steam Boiler to Main

In connecting steam boilers to mains, it is important that all outlets provided in boiler be connected their full area to the steam main. By so doing, the velocity of the steam leaving the boiler is reduced to a minimum. The steam main may be any size required, called for by good practice.

The Boiler Pit

To obtain the best results it is advisable, whenever possible, to deepen the Ash Pit, either by making a raised foundation under the boiler or by excavating and making a brick or concrete floor under the boiler. This will permit of better draft and consequently improve combustion.

Such a sub-pit will also prevent, to a considerable extent, any chance of the grate bars burning out due to the accumulation of ashes.

Guarantee

These boilers are guaranteed only to the extent of furnishing new castings for any found defective in manufacture. They are conservatively rated according to accepted standards, but on account of the varying conditions surrounding their installation, we do not guarantee our boiler except as specified above.

Shipment

Boilers are shipped from factory. We deliver everything in perfect condition to the freight companies. Our customers must look to the carriers to recover any loss or damage to castings. Do not pay the freight until you have examined the goods and checked up quantities. If any damage or shortage, insist on Agent writing it on your receipt.

Repairs

When ordering repair parts it is important that you give us the Serial Number of the boiler. This will avoid delay in filling the order and will insure the correct pattern being sent.

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The Serial Number can be found on a small Brass Plate riveted to the Fire Door.

Section Cement Sufficient asbestos cement is furnished with all boilers to make them gas tight. Cement must be placed between the sections wherever beads or ridges show. It is very important that this be done, as otherwise the gases will "short circuit," and will not get the proper fire travel.

Boiler Coverings All boilers should be covered with asbestos cement at least an inch thick, which will increase both their efficiency and economy.

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Telegraph Code ORDERS AND SHIPMENTS

Ship immediately.....	Acorn
Ship by express.....	Apple
Ship by freight.....	Banana
Ship by best route.....	Cherry
Ship immediately and follow by tracer.....	Citron
When can you make shipment.....	Dates
Have you shipped our order (number or date).....	Figs
When will you ship our order (number or date).....	Grape
Send tracer after our order (number or date).....	Lemon
Your order (number or date) was shipped.....	Olives
Expect to make shipment of your order (number or date).....	Orange
Hold for instructions order (number or date).....	Peach
Add to our order (number or date).....	Pears
Your order (number or date) does not specify.....	Plum
Change our order (number or date) to read.....	Quince
At what price and how soon can you furnish.....	Violets
Quote best price on.....	Raspberries
Wire reply at once.....	Huckleberry
F. O. B. Factory.....	Artichoke
Enter order as per inquiry of.....	Strawberry
Enter order as per quotation of.....	Willow
Answering your telegram of even date.....	Yucca
Necessary parts to increase — Boiler to —.....	Zamia
Referring to our order (number or date).....	Cocanut
Referring to your telegram of (date).....	Tangerine
Duplicate our order (number).....	Walnut
F. O. B. Factory with freight allowed to Destination.....	Shamrocks
Can ship immediately on receipt of order.....	Narcissus
Your order does not specify steam or water, wire which is wanted.....	Coffee
Will mail you today bill of lading covering order (number).....	Vanilla

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SQUARE SECTIONAL BOILERS STEAM

S-18-4	Cream	S-30-6	Mignonette	S-36-11	Redwood
S-18-5	Drab	S-30-7	Nasturtium	S-50-6	Dalmatian
S-18-6	Maroon	S-30-8	Teasel	S-50-7	Danaea
S-18-7	Salmon	S-30-9	Papyrus	S-50-8	Darwinia
S-24-5	Carmine	S-36-6	Mahogany	S-50-9	Darnell
S-24-6	Green	S-36-7	Maple	S-50-10	Davallia
S-24-7	Yellow	S-36-8	Mulberry	S-50-11	Deltoid
S-24-8	Grey	S-36-9	Palm	S-50-12	Desmanthus
S-30-5	Maize	S-36-10	Pine		

WATER

W-18-4	Slate	W-30-6	Jasmine	W-36-11	Tulip
W-18-5	Ochre	W-30-7	Jonquil	W-50-6	Desmodium
W-18-6	Venetian	W-30-8	Lygodium	W-50-7	Diosma
W-18-7	Vermilion	W-30-9	Mandrake	W-50-8	Dillenia
W-24-5	Black	W-36-6	Heather	W-50-9	Draba
W-24-6	Brown	W-36-7	Honeysuckle	W-50-10	Drymoda
W-24-7	Buff	W-36-8	Lily	W-50-11	Duranta
W-24-8	Purple	W-36-9	Ivy	W-50-12	Dysodia
W-30-5	Hyacinth	W-36-10	Thistle		

ROUND SECTIONAL BOILERS STEAM

184-S	Fagelia	234-S	Filbert	S-28-4	Cinnamon
185-S	Fagus	235-S	Flugger	S-28-5	Cluster
186-S	Fennel	236-S	Foetidia	S-28-6	Calculus
204-S	Ferula	264-S	Fugosia	S-31-4	Chrystal
205-S	Festuca	265-S	Faleiana	S-31-5	Clinquant
206-S	Ficus	266-S	Fuchsia	S-31-6	Cochineal

WATER

184-W	Ebenus	234-W	Epacris	W-28-4	Bismuth
185-W	Echinops	235-W	Elodea	W-28-5	Blanket
186-W	Eyriesii	236-W	Ecymus	W-28-6	Blossom
204-W	Endive	264-W	Earina	W-31-4	Bolster
205-W	Emelia	265-W	Edentate	W-31-5	Bonnett
206-W	Ehretia	266-W	Erythea	W-31-6	Burnish

ROUND JUNIOR BOILERS

110 Acacia 112 Aconite 114 Adonis 61 Abroma 81 Aizoon

HIGH TEST BOILERS

W-21-4	Hakea	W-21-6	Hedera	W-21-8	Hickory
W-21-5	Hamelia	W-21-7	Hibiscus	W-21-9	Holly
				W-21-10	Heliopsis



